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Address.

THE VENEREAL DISEASE PROBLEM IN MASSACHUSETTS.*

By Merrill E. Champion, M.D., C.P.H., Boston,
State District Health Officer.

It is the duty of municipal health departments to use all means within their power to cut down the death rate and to lessen the morbidity from preventable disease. It is the duty of the state health departments to point out the best ways of doing these things; to coördinate the efforts of the individual municipalities; and to employ all reasonable educational methods to impress the importance of hygiene upon the citizens of the State. It is in this spirit that the State Department of Health of Massachusetts has inaugurated a campaign against venereal disease.

I need hardly dilate upon the importance of the problem with which we are dealing. War conditions have dashed out of the eyes of thinking people the sandy accumulations of years of dodging, ostrich-like, an issue which has become progressively more menacing. The prospect is not one to cause rejoicing. We see men incapacitated from doing their duty to their communities as decent citizens; we see women condemned to lives of suffering and sterility; and, worst of all, we see children blind, defective, tainted with a taint not of their own seeking but handed down to them by those whose duty it was to protect them. We see insane hospitals filled with paretics as the result of syphilis, and entailing enormous expenditures upon the Commonwealth. Indeed, so widespread is venereal disease that there is good reason to believe that at least 5% of the population of our own State is infected with syphilis in one form or another. Add to this the figures obtained from European sources since the world-war began, and we can readily see that for economic and patriotic reasons, if for no others, we must take an aggressive stand.

The aims of the State Department of Health in the venereal disease campaign may be said to be fourfold: to prevent the suffering and economic loss due to the disabling effects of venereal disease; to help reduce the mortality among infants and children due to this cause; to lower the general death rate; and to prevent blindness due to venereal infection. It plans to accomplish these ends by educational measures; by furnishing free a drug for the treatment of syphilis, thus rendering the patient non-infective; by repressive measures directed against the incorrigible carriers of the disease; and by methods of reporting.

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* Delivered before the Norfolk District Medical Society, February 26, 1918.

Of the above-mentioned measures, the simplest to inaugurate is, of course, reporting. It is one thing, however, to make a disease reportable and quite another to get it adequately reported. For this we have to rely upon the conscientiousness and good faith of the practising physician. In this State syphilis and gonorrhea have been declared diseases dangerous to the public health, reportable to the State Department of Health directly, under authority of Chapter 670 of the Laws of 1913. This action of the State Department of Health went into effect February 1, 1918. Because of unavoidable delay in printing, the reporting blanks are just now getting into the hands of the physicians. A brief résumé of the essentials of the regulations regarding reporting may be in order here.

All patients suffering from gonorrhea or syphilis in the infectious stage are to be reported by serial number at the time of consultation with a physician unless they exhibit a numbered circular which shows that they have already been reported. If the patient remains with his physician until a cure is effected no further action is called for. If, however, the first physician is abandoned for a second one, the latter is expected to notify the previous attendant that he has the patient. No further notification than this is required if the patient remains with this second choice until cured. On the other hand, if the patient leaving his original physician before a cure is effected, does not go to another or neglects to show his serial number to any subsequent physician he may consult, the physician originally in charge of the case must, at the expiration of six weeks without word of his patient, report the patient's name, address and serial number to the State Department of Health, which in turn will notify the local health department, in order that proper measures of surveillance may be instituted. Thus it will be seen that secrecy as to name and address depends entirely on the patient himself.

As I have already said, in the matter of reporting, success is dependent upon the hearty coöperation of the practising physician. The State Department of Health, on the other hand, expects to go far in the matter of rendering syphilis non-infective through its distribution of arsphenamine, which is a satisfactory substitute for salvarsan, and which is produced by the Department itself. To aid in the control of all forms of venereal disease and to insure adequate distribution of arsphenamine, the State Department of Health is arranging for some sixteen "State approved" venereal clinics throughout the Commonwealth. These will be under local management; will furnish treatment to those who need it; will, we hope, serve as educational centers; and will distribute arsphenamine to practitioners qualified to administer it. As we all know, it requires skill and the necessary apparatus to administer a drug like salvarsan, Moreover, a more fundamental requirement still is skill in diagnosis. For this reason it is highly desirable that in as many instances as possible the diagnosis of syphilis be made and the treatment administered by experts such as are more likely to be found in the larger hospital centers. It is greatly to be desired that the family physician make use of these "State approved" clinics for those of his patients who cannot afford the services of a specialist. It is only by the closest coöperation of all who have the public health at heart that headway can be made against the venereal evil. A noteworthy step along the line of coöperation was recently taken at a meeting of many of the Wassermann workers of the State with the State Department of Health. A uniform system of reporting was agreed upon and measures were taken which will minimize to a great extent in the future, the possibilities of discrepancies in the results obtained in different laboratories. It is of interest to know that about thirty thousand specimens were examined last year in the State Wassermann Laboratory alone.

A further point, and an important one in connection with coöperation in the treatment of venereal diseases, deserves mention. We all know the evils of "counter prescribing" by drug stores. Deprecated by the better class of druggists, it is none the less practised to a very great extent by the less scrupulous men. The State Department of Health now has a bill before the Legislature relative to the prescribing and compounding of certain drugs. This bill would make it unlawful for any person other than a duly registered physician to prescribe or recommend to any person medicines for the treatment of venereal disease, or to compound any medicine for this purpose from any written or printed formula unless signed and dated by a registered physician. I am glad to say that representatives of the Massachusetts State Pharmaceutical Association have expressed themselves as in favor of this bill.

Another bill whose provisions will render easier the task of the physician provides that all venereal disease records shall be held confidential. An exception is made, however, to the extent that "nothing in this act shall be construed to prevent any legally qualified practitioner of medicine within the Commonwealth, who has definite knowledge of venereal infection of any individual obtained through professional channels from warning the parents or guardians of any minor, or the individual himself or herself if of legal age, from whom such venereally infected individual has obtained promise of marriage while concealing his or her disability from venereal disease. Any such warning or advice given in good faith by any physician shall be deemed and construed to be a privileged communication and shall not constitute a slander or libel."

Quite apart from the problem of venereal disease as it occurs in the average patient of the average doctor is that of infection of those who do not seek treatment at all or who go to quacks. Many of these cases are found, of course, among prostitutes and other victims of loose living. As a measure of protection of the public health, we must provide facilities for treatment of those who do not voluntarily seek treatment. A bill is now pending before the Legislature which calls for a physical examination of all persons committed to a penal institution for thirty days or more. Treatment can then be carried on as they serve out their sentences. Furthermore, it can probably be worked out through coöperation with the courts that dispensary treatment be enforced by the use of the probation system. Adequate institutional care will have to be provided for those who through mental defect easily become victims of the social evil. Lastly, there is urgent and immediate need of hospital beds for venereal cases. In the past, moral considerations have caused hospitals to discriminate against this class of case; thinking people must now realize that the principles of preventive medicine are as necessary in dealing with syphilis as in dealing with diphtheria.

I have briefly outlined some of the various steps in the program which the State Department of Health expects to follow. I have not spoken, however, of the most important one of all. Hand in hand with measures for reporting, for treatment, for repression, must go a widespread effort directed towards the education of the average citizen as to the need of all these measures. He must be shown the reality of the menace and yet must be reassured as to the care and tact which will have to be exercised in following up cases where so many social and family relationships are involved. The physician can be of the utmost assistance to the health authorities in this educational campaign. It is imperative, also, that newspaper editors break the impenetrable silence of the past regarding venereal disease. Some are already lending their assistance through editorials and through full reports of talks on venereal diseases given by qualified persons. The majority of newspapers, nevertheless, are as yet afraid to speak out. Much valuable assistance is being lent by the clergy; we need still more. Useful educational work among the men of our Army and Navy is now in progress; in this the State Department of Health is taking its share at the request of the national authorities.

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Original Articles.

HEMORRHAGE FROM THE UTERUS IN THE NON-PREGNANT WOMAN.*

By Frank A. Pemberton, M.D., Boston.

This is a pleasant subject to speak on, for the discovery of the cause of the trouble and its correct treatment are possible because the different pathological possibilities are, for the most part, well catalogued and a satisfactory method of treatment has been worked out for each one.

This bleeding comes under two heads,—menorrhagia and metrorrhagia. Menorrhagia is an excessive menstrual flow, and may occur as an increased amount of flow during a normal time, a prolongation of the period of flow, an increase in the frequency of recurrence, or any combination of these. The determination of the existence of menorrhagia depends, therefore, on the comparison of the present length and amount of flow with that which is normal to the patient, and is simply a relative term for each individual. As a general rule, the formation of clots means an excessive flow.

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* Read before the Norfolk South District Medical Society, December 6, 1917.

Metrorrhagia is uterine bleeding occurring independently of menstruation, that is, between the periods, and is always a symptom of a pathological condition.

The causes of these two forms are frequently the same, so that we can most intelligently consider them together.

The causes of pathological bleeding may be divided into pelvic and extrapelvic. We are more concerned with the former, but perhaps it would be interesting to say a few words about the latter, first. Such bleeding is seen occasionally in the acute infectious diseases, especially influenza, nephritis, chronic passive congestion from cardiac disease, arteriosclerosis; though it is an unsolved question as to whether the high blood pressure or change in the uterine blood vessels is the cause, and diseases of the blood, such as anemia, except chlorosis, in which the flow is diminished, myelogenous leukemia, and purpura. The flowing is rarely serious and amounts to little in the long run; but serious cases are seen, as, for instance, one cited by J. T. Williams, in a case of nephritis, where the amount of blood lost menaced the patient's life. The important point to remember is that it should not be taken for granted that the disease afflicting the patient is the cause of the bleeding, but a pelvic cause should be searched for to prevent future trouble.

The pelvic causes are many; almost every gynecological condition may show pathological bleeding at some stage. Some may cause both menorrhagia and metrorrhagia, but most are confined to one or the other. It seems to me that it would be more serviceable to take them up, so far as possible, in relation to the age at which they most commonly occur.

Before puberty bleeding from the vagina in the form of a bloody discharge, may be due to a rare form of sarcoma of the cervix, of which few cases have been reported. The disease takes the form of grape-like polyps, extends rapidly and can, of course, be cured only by means of early diagnosis and operation. Always think of it and take steps to make sure.

In the first decade after puberty, the most common form of bleeding is a profuse menorrhagia where no pathological cause can be found. The patient bleeds over a longer time and more profusely than the normal amount, occasionally endangering her life and usually becoming weak and physically useless. Examination of specimens removed at operations in such cases has resulted in several theories as to the cause. The uterus is usually smaller than normal and was thought to be undeveloped and therefore unable to contract on the blood vessels to control bleeding, but many girls who do not bleed abnormally have similar uteri. An excess of connective tissue in the uterine wall and so-called cystic ovaries have also been advanced as theories, but the same conditions hold true as regards the uterus. Careful histological examination, in many cases, and comparison of the findings with the histories of the patients, has resulted in the belief that excessive uterine bleeding seems to have no relation to the amount of connective tissue in the uterine wall, to changes in the endometrium, except growths, or to changes in the ovaries, except growths. That the ovaries cause menstruation by manufacturing an internal secretion, that removal of them stops this particular form of bleeding, and that x-ray and radium treatment, both of which act on the ovary,—about which more will be said later,—control these cases, make it seem probable that in these patients we are dealing with an excessive production of the internal secretion of the ovary, which results in increased bleeding. It is called, descriptively, uterine insufficiency.

Two occasional causes seen at this stage of life are cervical polyps and erosion of the cervix. The polyps cause menorrhagia, if large, but are more frequently noticed by causing metrorrhagia, or a bloody discharge, due to necrosis. The erosion is one we see quite often in virgins, and consists of a circular, reddened, easily bleeding area around the external os, easily recognized on inspection, which makes a bloody discharge.

During the period of sexual maturity, many and various causes are met with, which have to be considered in arriving at a diagnosis. First, following pregnancy, which may have terminated in normal labor or miscarriage, abnormal bleeding results from retained placenta, chorio-epithelioma, and puerperal sepsis. The bleeding from the first is irregular, stopping for a few days at a time only, not profuse as a rule, though this depends on the amount of placenta retained and continues until the placenta is cast off or removed. If retained for weeks, the placenta becomes organized into connective tissue, forming a so-called placental polyp which keeps up the flow, though not as profusely as at first. Chorio-epithelioma, on the other hand, is characterized by a sudden onset of hemorrhage, lasting only a short time, but occurring repeatedly because the tumor erodes the walls of blood vessels from time to time as it grows. Chorio-epithelioma grows from the cells covering the chorionic villi of the placenta, the Langhans' layer and the syncytium. These lie in the blood spaces between the uterus and the placenta so that metastases take place readily through the veins of the uterus which open into these blood spaces to near or distant parts of the body. It grows rapidly because it consists of fetal tissue, which normally has a rapid rate of growth, and lies in the ideal culture medium, blood. So it is easily understood that early diagnosis is of the utmost importance if the patient is to be cured. Bleeding in puerperal sepsis means that either there is retained placenta or an acute salpingitis with pelvic congestion and flowing from that cause. It is believed that retained infected placenta keeps up an endometritis by acting as a focus from which infection spreads, for as soon as the placenta is removed, the endometritis clears up and the bleeding stops.

As regards the inflammatory diseases of the pelvis, in acute salpingitis we find both menorrhagia and metrorrhagia, not, as a rule, serious in amount and clearing up as the disease gets well. In the chronic stage, where the uterus is retroverted and held down by adhesions, we sometimes find menorrhagia, due to chronic passive congestion. Tuberculosis of the tubes causes amenorrhea, but if the disease attacks the endometrium, as it does if let go long enough, in about two-thirds of the cases, a watery, bloody discharge occurs. Such a discharge, after a period of amenorrhea with pelvic pain, in a young woman, should always suggest tuberculosis. It is due to ulceration of the endometrium.

Mucous polyps are a frequent cause of menorrhagia and of metrorrhagia when they become necrotic. They grow from the endometrium as well as from the cervical mucous membrane and increase in frequency towards fifty years of age. Always remember that both types may be present in the same case, the endometrial ones being inside out of sight, so that in every such case the uterus should be curetted carefully. The cervical polyps are frequently multiple in number. They rarely cause serious bleeding.

Fibroids are another frequent cause of menorrhagia, but only so when they are submucous, necrotic, undergoing malignant degeneration, or cause a retroversion with the resulting passive congestion. You have all seen large fibroids causing pressure symptoms, which do not cause excessive flowing. The bleeding is supposed to come from dilated vessels in the endometrium bordering on the tumor rather than from the endometrium covering it. It is important to remember that a submucous fibroid, not large enough to be palpable on bimanual examination, can cause pathological bleeding. Such fibroids can be diagnosed only on ether examination. When a submucous fibroid becomes pedunculated, a so-called myomatous polyp, it may easily become necrotic, and then causes metrorrhagia.

Some patients with retroversion and prolapse of the uterus are afflicted with menorrhagia. Such cases show edema of the uterus, congestion of the blood vessels and varicose veins in the broad ligaments, from which findings the conclusion is drawn that the bleeding is due to passive congestion and loss of contractile power of the uterine musculature. Most of them are relieved by a suspension, but some are not, probably because the uterus does not regain its normal tone again.

Non-malignant tumors of the ovaries cause no trouble as regards this subject unless they have a pedicle which becomes twisted, and then the patient may flow for a few hours, though not seriously. Why that should cause flowing, we do not know. Malignant tumors of the ovaries, on the other hand, frequently do cause irregular flowing and profuse menstruation; why, is not certain.

Towards the climacteric we find two forms of flowing which are quite common. Both are characterized by menorrhagia. In one, the only pathological finding is a large uterus, said to have more connective tissue in it than normal, as a result of child-bearing, and frequently, arteriosclerotic blood vessels. The bleeding has been laid to loss of tone in the muscle and rupture of the blood-vessels, but here we meet again with a contradiction similar to that in girls, that is, that many women have similar uteri with no bleeding. Therefore, this also is laid to an excessive amount of internal secretion of the ovary with the resultant bleeding. It seems possible, from a theoretic view, however, that the amount of secretion is the same, but that the uterus has lost its resistance to the secretion, or that its threshold value of resistance is lowered. Anyway, very profuse flowing may occur with no definite pathological cause.

The other type shows a hypertrophy of the endometrium, it being thrown into folds and polypi, frequently a centimeter thick, and containing glands so dilated with secretion that they can be seen macroscopically. This is called a polypoid gland hypertrophy of the endometrium.

At this stage of life also is found the deeply lacerated cervix with an erosion of long standing, which gives a bloody discharge. This leads to the question of cancer of the cervix, which is most common near the menopause, both before and after. I want to emphasize strongly, at the great risk of boring you, that you should be on the lookout for cancer at all ages. It should always be kept in mind and proved to be absent rather than present in every case that presents a sore-looking cervix. I have seen a case at twenty-three years, one at twenty-six and several around thirty-five, two of which got by good men. They were both diagnosed as bad lacerations. The symptoms of cancer of the cervix you all must know, so it seems hardly worth while to enumerate them.

After the menopause, all bleeding should be looked on with the greatest suspicion. There are six main causes of it, the incidence of which in 95 successive cases of bleeding after the menopause, examined with and without ether, but with a pathological examination of the tissue removed, at the Free Hospital for Women, was as follows:

Carcinoma of the cervix	33%*
Carcinoma of the fundus	12½%†
Erosion of the cervix	21%
Polyp of cervix and endo.	11%
Fibroids	8%
Senile vaginitis	4%
Making	89%

* With an average age of 56 years.
† With an average age of 58 years.

The remaining 11% comprised cases of sarcoma of the cervix, prolapse, chronic int. endometritis, chronic nephritis, and a malignant cyst of the ovaries. Most of the carcinomas of the cervix were advanced and diagnosed on inspection, but, nevertheless, this shows that carcinoma of the cervix is the most common cause of bleeding at this time, and its preceding stage, erosion of the cervix, is the next, comprising together, 54%. Therefore, when a patient bleeds after the menopause, you may take it for granted that there is an even chance that she has a precancerous condition of the cervix or cancer. Carcinoma of the fundus of the uterus is less common, 12½%, and usually occurs at a later age than cancer of the cervix, the average age of 58 years in these cases being lower than I had thought. You may take it for granted that bleeding in a woman over 70 is sure to be cancer of the fundus of the uterus. According to these figures, taking both types of cancer, 45% of women bleeding after the menopause have cancer.

Senile vaginitis is characterized by a bloody discharge of a watery consistency, which is often quite irritating to the vulva, causing pruritus. The vaginal wall is smooth, glistening, and red in patches. Pathologically, there is an atrophy of the squamous epithelium lining the vagina, which allows the papillae which carry the blood-vessels to become exposed, leaving raw, bleeding patches.

The diagnosis of these different causes that I have enumerated is usually evident on examination, and the treatment follows logically. I wish to draw your attention to some of the troublesome ones only.

Fortunately, chorio-epithelioma is rare because its early diagnosis with certainty is difficult. The first warning given is a sudden hemorrhage following, within a few days, weeks or months, the passing of a hydatid mole, or miscarriage, or labor. It is supposed always to be preceded by a mole and in the latter two cases—miscarriage and labor—only part of the placenta may have degenerated into a mole. After such a hemorrhage, the patient must be etherized and carefully examined, especially the inside of the uterus, with a curette, used gently because of the danger of causing metastasis. The diagnosis may be made on inspection if a bluish tumor is seen growing in the cervix or vagina. The tissue obtained with the curette shows, in the positive cases, syncytium and Langhans' cells, or either one alone. If such a find is made two weeks or more after the uterus has been emptied by miscarriage or labor, the diagnosis of chorio-epithelioma is very probable, because these cells die soon after the fetus dies, or leaves the uterus, because they are largely concerned in getting the necessary food from the maternal blood for the fetus and, like all cells, die out when their function is ended.

Fibroids are usually easily diagnosed. The difficult ones are the small submucous variety, and these require ether examination. The uterine cavity is mapped out with the curette and if in drawing it along the wall, the curette jumps up and then down over a hummock, or if a bulging of the wall is felt, where there should be none, one may be certain of a fibroid. Do not be misled by the internal os, for in drawing the curette out over that edge, the feeling is somewhat akin to that of a fibroid.

Fibroids often start to increase in size rapidly, that is, one can see a perceptible change in their size at intervals of one or two months. Most of these show microscopically signs of rapid growth, that is, many nuclei, staining deeply, with more mitotic figures than usual. Occasionally, in only 1 or 2% of all cases, such a fibroid turns out to be undergoing sarcomatous degeneration. Therefore, it is wise to take out such a fibroid.

The uterine polypi of small size, that is, those growing from the endometrium, can be diagnosed only by the curette, and frequently they are missed with that because they are soft; and as it is difficult to reach all parts of the uterine cavity with certainty, they may be passed by. If it is a question of whether it would be better to try to save the uterus, that is, if the patient wants children, and it is also thought best not to use radium or x-ray, then the uterus should be opened through the abdomen and inspected to make sure that there is no polyp that could be removed, before doing a hysterectomy.

Polypoid gland hypertrophy can be diagnosed only by the curette. One finds polyp-like pieces of tissue and thick strips of endometrium which macroscopically show dilated glands of a translucent ground-glass appearance scattered through them—in the aggregate, a large amount of curettings.

The diagnosis of cancer depends entirely on remembering that there are three types,—the epithelioma of the outside of the cervix, the adeno-carcinoma of the cervical canal, and the adeno-carcinoma of the fundus. They can be diagnosed in the early stages only by means of the microscope. When well advanced, the epithelioma can be recognized on inspection by its ulcerated appearance, if the tumor is of the corroding type, or by the cauliflower appearance, if of the so-called everting type.

Adeno-carcinoma of the cervical canal is recognized as cancer because, when first seen, it is usually well advanced and has ulcerated away the external os. The case which fools you is that in which inspection shows a perfectly normal-appearing cervix from the outside; it may be lacerated, but it is smooth, but which, nevertheless, is a mere shell full of cancer which may extend to the bladder wall and into the broad ligaments. For that reason, never fail to scrape out the canal with a small curette when you examine your patient. It is easily done, and the tissues, put in 5% formalin solution and sent to a competent pathologist, solve the question. If you get a large amount of crumbly, soft tissue, accompanied by sharp bleeding, you may be sure it is cancer. A few firmly placed tampons stop the bleeding.

Adeno-carcinoma of the fundus nearly always occurs after the menopause. You never want to feel that it cannot be cancer of the body of the uterus because the uterus is normal size or even smaller than normal. This type grows into the cavity of the uterus rather than into the wall, causing no enlargement at first, the reason for this being that the endometrium is sharply defined from the muscle of the wall so that it is natural for the tumor to grow in the line of least resistance, inward, and also the cancer starts on the surface, the deeper ends of the glands being much less active than the other parts. In the cervical canal quite a different picture is seen, for here the glands lie right in the muscle and have no choice but to grow there, thereby reaching the lymphatics immediately and causing metastases more quickly than either of the other two types, both of which grow on the surface. Also that is why the adeno-carcinoma of the cervical canal is more dangerous than the other two kinds. Usually an ether examination, with exploration of the uterine cavity, is necessary to make a diagnosis of cancer of the body, but it is always worth while trying to reach the inside with a small curette without ether, for you may catch a piece of the growth large enough for examination.

I want to say a little about the cases of cancer that we see. We are getting more and more each year now,—I suppose because the public is becoming educated,—but most of them are well advanced cases. One reason for this is that quite a number do not have any bleeding, which is the symptom that calls attention to trouble, until the disease is well along. The bleeding is caused by ulceration which does not occur until the blood supply is poor, so if there is no trauma or infection to start bleeding, the disease gets a head start on its victim. The second case is that where the patient bleeds and waits, is too busy to consult a doctor, or puts it off, or does not like to go to a doctor about such a trouble, or thinks it is only the change of life, or any one of several unintelligent reasons. The third case is the patient whose doctor tells her that she ought to be examined and she refuses to be, or puts it off. The fourth case is where the doctor says it is the change of life, or does not like to examine an old friend, or tells her it does not amount to anything and will stop in a little while. It has been my experience that nearly all come in the first three classes, but the exception, the fourth class, comes often enough more than to prove the rule. In gynecology, bleeding means cancer, until proven otherwise, and it is so easy to remove a piece of tissue from a reddened area on the cervix or explore the cervical canal with a small curette in your office and put the tissue obtained into 5% formalin to send to a pathologist, that there should be no fourth class.

In making an examination, always bear in mind the fact that there may be two or more causes present in the same case. Polyps and fibroids often occur together. Fibroids and cancer at the same time are fairly frequent. Senile vaginitis may mask an early cancer of the cervix. You cannot afford to be content with finding one cause for the trouble, because finding a second or a third may put an entirely different complexion on the case from what the first one gave.

While the cause is nearly always evident on examination, there are many cases which require ether examination and D. & C. to decide what the diagnosis is. I think it may be taken as a general rule that where the cause is not immediately obvious a D. & C. should be done. The cnly exception that comes to my mind is the young girl with menorrhagia just beginning, in whom it is frequently advisable to try hygienic methods first, because the likelihood of her having cancer or a polyp of the endometrium is small. Then if she does not improve soon, the D. & C. should be done, for its negative value, if nothing more. In doing a D. & C. it is easy to be ready to do anything that may be necessary to cure the patient.

The treatment follows on the diagnosis and is usually obvious, the making of the diagnosis being the treatment in some cases, such as the removal of a submucous, pedunculated fibroid by a D. & C.

I think the treatment can be made clearer if we consider the methods of treatment at our command and what they are good for. When the patient has a constitutional disease such as anemia, chronic nephritis, high blood pressure, or what not, and no local cause can be found, the treatment is obvious.

Quiet reset in bed is necessary when the bleeding is profuse and is especially valuable in the young women or girls with profuse menstruation. They should be in bed during their periods. In these same patients hygiene, directed towards better physical development, will sometimes get them well, if persisted in for several months, having them stay in bed during the catamenia. Take them out of school, lay out a written schedule of when to go to bed, get up, bathe, eat, exercise, what kind of exercise to take—the main point being to avoid fatigue; and generally schedule their lives as they would be if they went to one of these training camps.

If no improvement is apparent in two or three months, then advise an ether examination.

Packing of the vagina is resorted to when rest in bed does not control the bleeding. The main things to remember are to put either alcohol or iodine on the inner end of the gauze as an antiseptic, and to pack the vault of the vagina tightly, first back of the cervix, then on each side and the front, thereby raising the uterus and putting the broad ligaments on the stretch, which seems to decrease the uterine blood supply. That it is effective is known to every surgeon who has resorted to pulling up on the cervix to stop bleeding from the uterine vessels during an operation on the uterus, or hysterectomy.

The drugs are of little benefit. Ergot and hydrastis are useless, except in bleeding due to retained products of conception. Styptcin and calcium chloride are said to work sometimes, but are generally useless.

Pituitrin is worth trying in cases where no cause can be found for the bleeding, especially the young women.

Dilatation and curettage finds its greatest value in diagnosis. It is used as a cure when the cause is in the cervix or endometrium and not malignant, polyps, submucous fibroids, retained products. It removes the polypoid gland hypertrophy, but that may recur. Some of the young girls, with uterine insufficiency, get well if they are curetted at each catamenia for several successive months. This is more dangerous, however, than the x-ray or radium.

Abdominal operation is called on for the many causes found in the abdomen and for malignant conditions. It seems hardly necessary to go into details. It should be remembered that with a simple retroversion and prolapse, a suspension may not effect a cure of the bleeding, either because the bleeding is due to a hypersecretion of the ovary instead of the retroversion, or the uterus does not regain its tone.

The two methods of treatment which render satisfactory the treatment of the uterine insufficiency cases, both in young and old, are radium and x-ray. They both act in the same way, that is, by killing the follicles in the ovaries, and thereby stopping the internal secretion. They are more effective on ripe and ripening follicles than on the primordial ones, and therefore it is harder to cause amenorrhea in young women, who have many follicles, than in old, and also hard to cause permanent amenorrhea because all of the follicles must be destroyed to obtain it. They are supposed to have a direct action on the uterus, and also on fibroids, for the treatment of which they are frequently used. There is an increase of connective tissue in the uterus and fibroids; it is said that the treatment causes an obliterating endarteritis, and fibroids decrease in size. This last effect, however, may be comparable to the shrinkage occurring often at the menopause, and be due to action on the ovaries rather than to direct action on the tumor.

The two methods differ in that the radium is much more powerful, much more effective than x-ray. X-ray can be given in two ways, large or small doses as the urgency of the case requires, but even with large doses it takes many more treatments to attain the desired effect than with radium. X-ray requires large doses for from 9 to 18 weeks to produce amenorrhea, while one treatment of radium will do it. The reason for it is, of course, that if x-ray treatment were continued for many hours at a time—long enough to produce amenorrhea—burns of the skin would result, and also it is decidedly uncomfortable to be in one position for as long a time as x-ray would require. Whereas radium can be placed in the uterus and the patient simply stay in bed for the required length of time. X-ray treatment is also much more expensive than radium on account of the apparatus used.

We have had more experience with radium because we are lucky enough to have some and it is easy to use. For the young girl with uterine insufficiency, we put 50 mg. of radium in the uterus because that gets it nearer the ovaries than any other place except the rectum,—to which, however, radium seems to be very irritating,—and leave it from 4 to 12 hours, depending on how much effect we wish to get. It is, of course, better to leave it too short a time rather than too long because it is simple enough to give one more treatment, if necessary. Radium works better in these cases than x-ray because the latter is not so effective in women up to the age of thirty-five as it is later in life. Formerly many of these cases came to hysterectomy, which can now be avoided.

If amenorrhea is caused by radium it has not been established whether it is permanent or not. We do know that, in young women, if small doses are used, it will cause amenorrhea for several months only, but whether large doses will cause it permanently only time will tell. X-ray in large doses causes amenorrhea in young women for several months to a year, but rarely causes a permanent amenorrhea unless the treatment is continued. In older women, of forty and over, it gets its effect much quicker and it is probably more permanent.

Both are very valuable in decreasing bleeding in fibroids in those patients who require operation but who are poor surgical risks on account of having a secondary anemia due to their long-continued profuse menorrhagia. The bleeding can be decreased or stopped, giving the patient a chance to regain strength before being operated on.

Radium is especially valuable in stopping the bleeding from inoperable cancer of the cervix. Here it acts locally to a marked degree. In most cases the ulcerated cervix cleans up and presents a smooth surface like scar tissue, ridding the patients of the bleeding and discharge and relieving them immensely, after two or three treatments at intervals of about a month. The change externally is almost miraculous but, of course, the disease continues in the broad ligaments and glands. Occasionally it seems to stimulate the tumor, hastening its growth and the death of the patient.

You have to be careful in using it, however, because vesico-vaginal and recto-vaginal fistulae are very likely to follow if too strong a dose is used where the vaginal wall is deeply invaded.

X-ray will also stop this bleeding, but it is harder to apply and the treatment takes a much longer time.

* * *

A CRITICAL REVIEW OF INTESTINAL BACTERIOLOGY IN RELATION TO CERTAIN DIARRHEAS OF INFANTS.*

By Warren R. Sisson, M.D., Boston.

The purpose of this paper is to review, from a critical point of view, recent studies concerning the relation of the intestinal flora to certain forms of diarrheas that occur in infancy.

The question has been raised by many authors, whether the feces represent accurately the bacterial flora of all levels of the intestine, and can be considered a satisfactory source of material for studies of this subject. By a comparison of a stained fecal specimen with the number of colonies occurring on plates made from a similar specimen, it can easily be shown that only a small per cent. of the total number are viable. Eberle[1] estimated that 10.6% of the total number of organisms could be cultivated upon agar, 4.5% on gelatine. Klein[2] and Strassburger[3] estimate the percentage of viable forms as much lower. Furthermore, from studies of known cases of ileocolitis caused by the dysentery bacillus, it is safe to assume that, in general, only a relatively small per cent. of the organisms present can be cultivated upon the media commonly employed. Much has been written concerning the causes of this restricted growth. Conradi and Kurpjuweit,[4] Moro and Murath,[5] and others, have claimed that an inhibiting substance in the stool may, in part, explain the condition. Moro and Murath[5] conclude that the normal infant's stool contains inhibitive agents which are to be considered as natural protective substances. These are said to be present under all conditions of diet and health. These statements, however, lack demonstration.

Studies on autopsy material by Escherich,[6] Moro,[7] and others, on the variation in the flora at various levels in the intestinal tract showed that certain cocci and the B. lactis aerogenes were more numerous in the duodenum. Hess[8] has attempted to recover duodenal contents for bacteriological study by means of a catheter. The results of this study do not establish a definite flora for the duodenum, but suggest that certain cocci are more numerous at this level. Sufficient cognizance was not taken of organisms introduced in the diet, and of contamination from the gastric contents, the esophagus and the mouth. Experiments performed upon dogs by Cushing and Livingood,[9] also more recent studies upon puppies by Sisson,[10] show that in these animals one cannot speak of characteristic local flora. The evidence thus far assembled seems to show that fecal specimens contain all of the organisms at other levels, although an inaccurate picture of the flora may be obtained because of the relatively few viable forms, and the failure to cultivate, symbiotically, the viable organisms.

METHODS OF STUDY.

The morphological studies have been based principally upon the microscopical examination of stained smears. The early researches of Escherich,[6] which still form the basis for many of our ideas of intestinal bacteriology, were made in this way. The method has distinct limitations. Organisms cannot be definitely identified, and only general impressions of the types of the flora, depending upon their reaction to the Gram's stain, can be made. The method may be of some value in ascertaining the relative number of the organisms.

Attempts have been made to estimate the relative number of organisms. Strassburger[11] and others have endeavored to make actual counts of bacteria. Erble,[12] Klotz,[13] and Kramstyk[14] have made similar computations. The methods employed by these authors have been essentially the same. A definite amount of dried feces has been taken and dilutions made. The results of these investigators show marked variations, and lack sufficient confirmation to be of any scientific value. The great difference in consistency of feces, the disintegration of organisms and products of intermediary metabolism make it almost impossible to eliminate sources of error. Furthermore, estimates of numbers of organisms give no idea of the various kinds of organisms present. As yet, there is no satisfactory clinical method for estimating the number of organisms occurring in the intestinal tract. It is impossible, therefore, to say that the number of bacteria is either definitely increased or diminished in diarrheal conditions in infancy.

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* This paper was written in the course of some studies on the intestinal flora carried on in the Department of Pediatrics of the Johns Hopkins University.

The cultural methods for the study of the intestinal bacteria are not peculiar to this field. By use of the various media, it is possible to identify essentially all of the organisms present. Two problems concerning cultural studies, however, should be mentioned. Up to the present time, no adequate study of the anaerobic bacteria has been made, due to the lack of a satisfactory method. Although such studies are desirable, it seems questionable if they would be of great clinical value. It is difficult to consider the conditions within the intestinal lumen as strictly anaerobic.

The second problem concerns a satisfactory method for studying the symbiotic relation of the various organisms occurring in the intestines. Bacteria in large numbers may thrive within the intestinal tract in the presence of many other forms, but *in vitro* such growth cannot be satisfactorily reproduced. This fact must be considered in the interpretation of all cultural studies of the intestinal flora.

Various chemical properties of stools have been considered criteria of the organisms present in the intestinal tract. The reaction of the feces has been taken as an index of certain bacterial processes. We now know that alkaline and acid stools may be found under many conditions, and are of little diagnostic value. Large amounts of fatty acids, for instance, may occur in stools of breast-fed infants. The chemical studies of the stools in diarrheas, especially those forms associated with disturbances with carbohydrate metabolism, give no definite clue as to the nature of the bacterial activities that may be present in the intestine. Certain well-recognized end-products of bacterial action upon the proteins, occurring in the urine, such as indol, skatol, glycuronic acid, and the conjugated sulphates, have no recognized toxic action when occurring in intestinal disorders in infancy. It is interesting that the conjugating action of the sulphates with phenol, according to Meyer,[15] persists even in the most advanced stages of malnutrition. Similarly, the decomposition products of carbohydrates and fats, such as acetic, lactic, butyric acid, are undoubtedly, in a large measure, oxidized.

NORMAL VARIATIONS IN FLORA.

The normal intestinal flora of infants has certain general characteristics, the recognition of which is necessary for the understanding of the relation of bacteria to infantile diarrhea. The alimentary canal of the new born is sterile. The exact course and significance of the subsequent infection is still undetermined. Schottellius,[16] contrary to the views of Nuttall and Theirfelder,[17] contends that the intestinal bacteria are essential to life. Opposed to this, however, is the more recent work of Küster,[18] who was able to raise lambs under sterile conditions for 35 days. These animals are said to have developed normally. The meconium contains organisms seven to eight hours after birth. The flora at this period consists chiefly of spore-bearing forms and bacillus coli. The nursling's stool is characterized by large numbers of Gram-positive bacilli, called the bacillus acidophilus and bifidus. Cocci are also numerous. The flora of the older artificially-fed child is less simple. It is represented chiefly by Gram-negative bacilli—the B. coli predominating. Bacillus lactis aerogenes, spore-bearing forms, and streptococci are common.

It is of interest to know to what extent certain factors, such as fasting, may influence the character of the intestinal flora. It would seem reasonable to expect that the number of intestinal bacteria would be greatly reduced by periods of starvation. This is actually the case, and in general starvation causes a relative amicrobism of the intestinal tract. Cushing and Livingood[9] showed that, after fasting periods of 24 hours very few organisms could be isolated from the small intestine of dogs. These authors were also unable to isolate organisms at operation from the distal loops of intestinal fistulae in human subjects. In consideration of the technic employed, and particularly the small amount of material used, it is improbable that an absolutely accurate picture of the existing bacterial condition was obtained. Kendall[19] made an interesting observation upon Levanzin during the fasting experiment carried out at the Carnegie Nutrition Laboratory in Boston. On the 31st day of the fast, food was given at 9.38 a.m. About four hours later a high enema was given, and the recovered dejecta studied bacteriologically. Large numbers of organisms were obtained. These were similar to the normal flora of man at this level. Recent experiments by Sisson[10] upon puppies show that the number of organisms in the small intestine after periods of starvation can be greatly reduced.

There are few exact data concerning the influence intestinal secretions and products of digestion may exert upon the intestinal flora. As mucus is greatly increased in diarrheal conditions, it has been considered to have bactericidal properties. Opposed to this, however, is the fact that organisms will grow luxuriantly in solutions containing mucus. Any alterations that may result from variations in the character and amount of the intestinal secretions and products of digestion must be regarded from a purely hypothetical point of view.

Possibly the most important factor that may modify the character of the flora of the intestine is the diet. Before discussing the effect of various food elements, mention should be made of the results of ingestion of various organisms. The transitions in the bacterial flora by ingestion of organisms has been championed especially by Metchnikoff.[20] It is well known that this author considered that feeding of milk which is soured by B. bulgaricus caused an establishment of this organism in the intestinal tract. The work of Leva,[21] Cohendy,[22] and Belonovsky[23] has been used to support this view. These authors, however, never satisfactorily showed that the B. bulgaricus became a predominating organism in the intestine. Luerssen and Kuhn,[24] also Distasto and Schiller,[25] were unable to confirm the theory advanced by Metchnikoff.[20] Rettger,[26] from some recent experiments on mice, concludes that "ingestion of foreign bacteria, even in large numbers, does not of itself bring about an elimination or displacement of the common intestinal micro-organisms." The work of Raubitschek[27] and Kulka[28] supports this conclusion.

In discussing the effect of food, we may first consider the effect of high protein diet upon the flora. Wollstein[29] concludes that a high protein causes a preponderance of B. mesentericus, while B. coli is greatly increased. No definite flora was established. Rettger and Horton[30] studied the feces of rats fed exclusively on proteins. The results were not striking. The flora changed in that it became simpler. The Gram-positive forms increased in numbers. No definite relationship between the bodily conditions and the intestinal flora could be established. Herter and Kendall[31] fed monkeys and cats high protein diets, and state that a proteolytic flora was obtained.

Moro[32] and others have called attention to changes in the bacterial flora of infant stools after various diets. An acidophilic Gram-positive group of bacilli was considered characteristic of infants fed on breast milk. The feces of children fed on cow's milk was found to contain few of these organisms and numerous B. coli, cocci and proteolytic forms. Sittler[33] claims that additional lactose given to infants on a cow's milk diet causes a return of the bifidus type. Rettger[26] fed animals—rats and fowls—lactose, and found that B. acidophilus and B. bifidus became the predominating types. No data on the effects of single food elements upon the flora of infants are available.

Certain popular conceptions of the different types of intestinal disturbances in infants are based upon the bacterial changes certain food constituents are supposed to elicit. If a diarrhea, for instance, occurs after a diet with a high carbohydrate content, this is called a fermentative condition. Under these circumstances the intestinal flora is considered to consist of organisms that act primarily upon the carbohydrates. The products of this activity are thought to elicit the diarrhea. Similarly, a disturbance associated with the feeding of a diet containing a high percentage of protein is spoken of as a "putrefactive condition." The theory of these types of intestinal disturbances was undoubtedly first formulated by Escherich,[6] and amplified by his pupils. Escherich based his conception upon the following experiment. Specimens of milk were inoculated with various organisms, incubated, and the casein and carbohydrate content determined. A control specimen showed 4.6787 parts of casein, milk inoculated with B. subtilis 0.998 parts, milk inoculated with B. lactis aerogenes 3.495. The differences in the sugar content were not so striking except in the case of B. lactis aerogenes. Milk inoculated with this organism showed 1.923 parts of sugar, as compared to 3.641 in milk inoculated with B. subtilis, and to 3.671 parts in specimens inoculated with B. coli. Tobler and Bessau,[34] in an extended review of intestinal disturbances in infancy, have discussed the subject chiefly from the bacteriological point of view, as first advocated by Escherich. These authors consider that all diarrheas are primarily caused by the action of organisms upon carbohydrates (Gährung), or by their action upon proteins (Faulnis). No conclusive bacteriological or chemical findings are brought forward to support this classification of intestinal disorders. It still remains, therefore, a matter of dispute whether the intestinal disturbances discussed as fermentative and putrefactive are due primarily to bacterial activities, or whether they are caused by initial chemical changes. Kendall[35] has further emphasized the distinction between diarrheas caused by fermentative and putrefactive organisms. Based upon the protein-sparing power of carbohydrate, he has suggested that sugar solutions be given to infants with diarrheas caused by proteolytic types of organisms. This method of treatment has apparently given favorable results in many instances. There have been no clinical studies, however, which have demonstrated changes in the intestinal bacterial flora after the ingestion of sugar solutions in diarrheal conditions. The work of Rettger[26] shows that changes can be produced. This author gave lactose to rats and demonstrated a Gram-positive acidophilic type of flora in the stools. Sisson[10] was unable to demonstrate such a change in puppies by the addition of high sugar solutions to a diet of milk.

During the past thirty years a large number of organisms have been considered to have an etiological relation to infantile diarrheas. Escherich,[36] Moro,[37] and others have described so-called "Blaue Bazillose" diarrheas, also "endogene" infections in infants. The observations of those authors have never been fully confirmed, and we are left in doubt as to the exact organism thought to be associated with the condition described. The organism of the Blaue Bazillose, undoubtedly, was of the acidophilic group, similar to that found in normal breast-fed infant stools, and not unlike the Bacillus bifidus, considered by Herter to be the cause of a condition called "infantilismus." Schelbe[38] calls attention to the infrequency of these hospital epidemics of diarrhea in Germany in the past ten years, and questions the infectious nature of the condition. B. coli has been considered to elicit diarrheas, but such a causal relationship has never been demonstrated. Booker[39] suggested that certain streptococci and also the bacillus proteus vulgatus might elicit diarrheas in infancy. Bertrand[40] also found the B. proteus vulgatus in 100% of 55 stools from different diarrheal cases. Brinstock[41] and others have similarly considered the B. putrificus to be a cause of such conditions. In general, the theories advocated and the observations made by these workers have not been confirmed, and there is at present no definite evidence that these organisms can primarily elicit or prolong diarrheas in infants.

The investigations of Morgan[42] on the causal relationship of the so-called Bacillus Morgan No. 1 to diarrheas deserves special mention. In 1905 the author noted the presence of this organism in association with 28 of 58 cases of infantile diarrheal cases. Again, in 1906, he found it in 15 of 34 cases examined. The stools examined rarely contained pus and blood, and clinically these cases were in no way unlike those of the so-called acute intestinal indigestion with diarrhea. The organism was rarely found in normal stools, and never in stools positive for the dysentery bacillus. As diarrheal conditions were produced in kittens by feeding the organism, Morgan concludes that it was an important cause of summer diarrhea in infancy. Investigations of others make the identity of this organism reasonably certain. It has been found occasionally both in Germany and in the United States in association with diarrhea. It would seem, however, that further confirmatory observations should be made before the B. Morgan No. 1 can be said definitely to cause diarrheas in infants.

Attention has been called to the B. welchii as a causal factor to infantile diarrheas.[*] Of special interest in this discussion is the fact that the B. welchii is an ubiquitous organism, and is a normal inhabitant of the human intestine, except in early infancy. Knox and Ford[43] examined the stools of 18 children suffering from minor ailments and isolated the B. welchii in every case.[†] These authors found it but once in the stools of seven breast-fed children. Glynn[44] and Ten Broeck and Norbury[45] report similar findings. Tissier[46] fed pure cultures of B. perfringens[‡] to four kittens, and claims that within 24 hours a diarrhea was elicited, and that one animal died in five days after the ingestion of the cultures. (No mention is made either of the source of the material used. or of the media in which it was given.) The diagnosis of a diarrhea due to B. perfringens was apparently based upon microscopic examinations. Tissier attempted to prove that the condition may be contracted from members of the same species, and notes the development of a diarrhea in a nursing infant, after it was allowed to nurse a mother suffering from what was considered a diarrhea caused by the B. perfringens.* Korentchevsky[47] has carried on more extensive investigations. He injected rabbits of various ages, both intra-peritoneally and intravenously, with filtrates from cultures of B. welchii. These injections caused very toxic symptoms, often followed by death within three to four hours. Similar filtrates from bouillon cultures were administered per rectum. In one experiment, two of a litter of rabbits died within about ten days. No mention is made of the symptoms these rectal injections caused. No specific immune bodies were found in either of these animals; however, blood from animals treated in a similar way, but not dying from the infection, showed so-called "*fixator*" bodies, but no agglutinins or precipitins. A further series of experiments was carried out by feeding puppies ½ liter amounts of a bouillon culture of the B. perfringens. The animals gained weight; no mention is made of diarrhea being elicited,—however, specific agglutinins in dilutions, 1-50 and 1-80, were found. A series of experiments was also made upon full-grown dogs. These were fed, for a period of 86 days, cultures of B. perfringens without eliciting a diarrhea. Korentchevsky[47] records a protocol of one of these animals in which certain renal changes were noted at autopsy. Metchnikoff,[48] Hewlett,[49] and Simonds[50] have fed cultures of B. welchii to animals, but were unable to reproduce a diarrheal condition. We must conclude from the experimental studies in this field that no definite evidence has been brought forward which shows a causal relationship between the B. welchii and diarrheal conditions.

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[*] For a detailed review of the classification and the relation of this organism to diarrheas the reader is referred to a recent monograph by Simonds. (Monograph No. 5—Sept. 27, 1915—the Rockefeller Institute for Medical Research.)

[†] The presence of B. welchii in the stools is commonly based upon the so-called milk test. Freshly autoclaved litmus milk is inoculated with a specimen of feces; this is heated to 80 degrees for 15 to 20 seconds and incubated. At the end of 24-48 hours a positive test shows an acid reaction, gives a distinct odor of butyric acid, and the coagulum has a characteristic porous appearance due to the gas formation. Knox and Ford call attention to the fact that other spore-bearing forms may be present and that a similar reaction may be obtained. These authors believe, therefore, that such tests should always be confirmed by injecting the organism into rabbits as described by Nuttall and Welch, before making an absolute diagnosis of the presence of B. welchii.

[‡] Bacillus perfringens, Bacillus sporogenes enteritidis and Bacillus welchii are considered to be the same organism.

The first clinical observations to be recorded in support of the idea that B. welchii was the causal agent in certain diarrheas were made by Klein[51] in 1897, who studied an epidemic of diarrhea in adults. Later this author found the B. welchii in 4 of 11 stools from infants with loose stools, and concluded from his studies that this organism was an important etiological factor in the causation of infantile diarrhea. Klein based this conclusion not only upon the presence of the B. welchii in the stools but upon the toxic effect injections of recovered organisms produced in guinea pigs. Glynn[44] calls attention to the fact that injections of the B. welchii recovered from non-diarrheal stools have similar symptoms. Tissier[46] and Passini[52] found this organism in the stools of infants with diarrheas, and were led to a conclusion similar to Klein's.

Kendall has been an ardent champion of the theory that the B. welchii actually produced diarrhea in infants, and through his writings this conception has been accepted by some pediatrists as an established fact. In 1910 Kendall and his co-workers at the Boston Floating Hospital found the B. welchii to be present in the stools of 22 out of 293 cases of diarrhea in infants. In 1911, Kendall, Day and Bagg[53] found positive reactions for the B. welchii in 33 of 283 cases examined. In 1912, Kendall reported the presence of the organism in 53 of 135 cases examined. In 1914, Ten Broeck and Norbury,[45] also working at the Boston Floating Hospital, found the B. welchii to be present frequently in the stools of normal infants and in those of infants with various nutritional disturbances. For instance, 6 of 53 cases whose stools showed the presence of the dysentery bacillus also gave positive tests for the B. welchii. Veeder, Kilduffe and Denny[54] found the B. welchii in one of a series of 100 cases with diarrhea. Sylvester and Hibben[55] examined the stools of 122 cases of gastro-intestinal disturbances and, after repeated tests, found the B. welchii in 100 of these; 38 of these were clinically cases of ileocolitis.

Kendall and Smith[56] have described the symptomatology of this type of diarrhea associated with the B. welchii. These authors state that it is similar to the so-called infectious diarrhea caused by ths dysentery bacillus. The onset is sudden, the incubation time short. It is associated with fever, which continues for a number of days. There is generally marked prostration, and not infrequently nervous symptoms develop. Vomiting and diarrhea are said to occur early in the disease. The stools are numerous (20 to 30 a day) and, although they vary in character, they usually contain pus, blood and mucus. No pathological findings characteristic of this form of diarrhea have been described.

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* Bacillus perfringens, Bacillus sporogenes enteritidis and Bacillus welchii are considered to be the same organism.

Kendall suggested that the diarrhea in these cases be treated by giving a food with a relatively low carbohydrate and a high protein content. This therapy was based upon the conception that the carbohydrate splitting action of the B. welchii caused the loose stools, and that this action could be eliminated by feeding a diet relatively high in protein. The beneficial effect of this dietary measure in cases of diarrheas associated with the B. welchii has been considered by Kendall[35] and others to be confirmatory evidence that the condition was caused by this organism.

The facts thus far assembled fail, in my opinion, to establish the identity of a type of diarrhea in infants caused by the B. welchii. The lack of satisfactory experimental and clinico-pathological evidence warrant such a conclusion. As has been pointed out, it cannot be definitely stated whether the beneficial effect of protein milk and similar diets, with a relatively low carbohydrate content and a high protein content in these diarrheal conditions, is due to bacterial or chemical changes that may occur in the intestine. Furthermore, the fact that the B. welchii may be found normally in large numbers in the intestine makes it improbable that it bears a causal relationship to diarrheas in infancy.

The most definite knowledge concerning the bacteriology of diarrheas occurring in infants concerns those cases in which some strain of the mannite fermenting dysentery group is ~~found in~~ the stools. For the early researches on this subject, the reader is referred to the publications of Flexner[57] and his co-workers. More recently, Kendall[35] and his co-workers at the Boston Floating Hospital have given additional confirmations to the early work of Duval and Bassett[57] in which attention was first called to the association of the dysentery bacillus with summer diarrhea of infancy. In 1910 Kendall[35] found some strain of the dysentery bacillus, usually the Hiss Y type, in 75% of 52 clinical cases of ileocolitis. In 1914, Ten Broeck and Norbury,[45] working also at the Boston Floating Hospital, isolated the mannite fermenting type of the dysentery bacillus in 68% of 79 cases of ileocolitis. During the season of 1915, I had the opportunity to observe, at the Boston Floating Hospital, 16 clinical cases of ileocolitis. From 15 of these the Hiss Y type of dysentery bacillus was isolated by Norbury. In many of these cases positive cultures were obtained only after repeated examinations of the stools. The single case of this series of clinical cases of ileocolitis from which the dysentery bacillus was not isolated, showed the presence of positive agglutinins in the blood in high dilutions. Furthermore, smears showed many pus cells and relatively few Gram-negative short bacilli—a finding which must be regarded as very characteristic for this form of diarrhea associated with the dysentery bacillus.

The recent experimental studies of Hayden, Speed and Koontz[59] give additional evidence to the bacterial nature of the etiology of this form of diarrhea. These workers fed cultures of the dysentery bacillus (Hiss-Russell type) to kittens. Not only was a diarrhea with pus and blood produced, but positive agglutinins for the organism fed were found in the blood. During the course of these experiments one of the workers developed a diarrhea. Pus and blood were noted in his stools, and an organism similar to that given to the kittens was isolated. The infectivity of the condition has been frequently observed, especially in institutions and among various members of the same family who developed the disease. In contrast to the ubiquity of the B. welchii, the dysentery bacillus is rarely, if ever, found in the stools of normal infants. However, as this organism is present in the feces of the majority of cases of diarrhea in infants with pus and blood in the stools, and as a similar condition can be reproduced in animals, this type of diarrhea must be considered to be of an infectious nature, and caused primarily by the mannite fermenting strain of the dysentery bacillus.

It may be stated, then, that the dysentery bacillus, in one of its forms, is the only organism that has definitely been proven to be responsible for disease of the gastro-intestinal tract in young children. Conclusive proof of the etiological importance of any of the other organisms that have been described by various authors is still to be brought.

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EFFICIENCY IN THE EXAMINATION OF SCHOOL CHILDREN.

BY GEORGE E. DEERING, M.D., WORCESTER, MASS.

THE object of school inspection is to detect and prevent infectious or contagious disease, to determine the existence of abnormalities in pupils, and to detect vermin. We should also see that faults are corrected, and that absence from school is prevented.

This paper describes an efficient method for carrying out the general or annual inspection, the details of which have been arrived at, only after numerous time and motion studies, extending over several years, and having for their object thoroughness and speed. Each pupil is examined for twenty-six of the twenty-seven conditions named on the clinical card furnished by the Worcester Board of Health. This is accomplished without disrobing and without calling the attention of other children to the special defects of an individual. Every child is treated during the inspection exactly like every other child, regardless of defects found. The examination is made in the schoolroom; each pupil must lose approximately four minutes' time. The teacher gives part of her time, although this in no way interferes with her overlooking the class, and keeping the children employed. The entire time of an assistant is required. In the smaller schools where the principal has no assistant, the school department willingly furnishes one for the examination.

Three instruction cards are used,—one for the assistant, one for the teacher, and one for the medical inspector. They are used as follows: The method of inspection and what is to be accomplished is briefly outlined to the assistant, prior to the day of the inspection, and she is given the assistants' instruction card together with the teachers' instruction sheet and medical inspector's card. These she is to read and understand. Twelve teachers' instruction sheets are used; these the assistant distributes, or has distributed, on the morning of the inspection. The cards read as follows:

1.

INSTRUCTIONS FOR ASSISTANT IN THE MEDICAL EXAMINATION:

We will begin the inspection in the higher grades.

You will see that each teacher has the clinical cards for her class, and that she knows when the inspection in her room is to begin. She should distribute the clinical cards a few minutes before we are expected.

On the morning of the inspection, hand each teacher her instruction sheet.

When the inspection of pupils begins, you will mark cards as per instructions.

When the examination is completed, obtain the instruction card and list from the teacher. The names on the list are to be checked on the clinical card. Keep the list; we will examine these children later.

Read and understand the teachers' instruction sheet yourself.

2.

TEACHERS' INSTRUCTION SHEET.

The medical inspection will take place in the schoolroom.

The examining physician will give oral direc-

tions to the pupils, except as indicated under "Teachers' Instructions." In the first part of the inspection, the pupils form a line in the front of the room, each pupil carrying his or her health card. The second part will be conducted with the pupils in their seats, with their hands in front of them on top of their desks. The health card should be on the desks at this time. In the third and final part of the inspection, the examiner will be seated with his back to a window and near a table at which the assistant is sitting. The pupils will come to the examiner, two rows at a time; each pupil, when he or she reaches the examiner, is to place the health card on the table in front of the assistant. The routine school work must be stopped during the second part of the examination. *During the first and third parts, all pupils, except those in front of the examining physician, should be studying, or otherwise occupied.*

If this method is employed and the "Teachers' Instructions" are followed, no child need lose more than four minutes from school work, nor will the examination of any room of forty pupils, or less, consume more than fifteen minutes total time.

TEACHERS' INSTRUCTIONS.

As soon as you receive this instruction sheet, make a list on a fresh sheet of paper of the names of absent pupils, and also state the total number of children present today (the day of the inspection). On the same paper make a list of the pupils in your room who have, or whom you suspect of having, any of the following abnormal conditions:

1. Deformity.
2. Paralysis.
3. Stammering, or voice defect.
4. Chronic cough (over two weeks).
5. Nervousness (any kind).
6. Kidney trouble (frequent basement visits).
7. Broken bones.

These lists of names, together with this instruction sheet, should be handed to the assistant at the close of the medical inspection in your room. On the day of the inspection you are to sort the health cards, and place those for each row on the front desk of that row. When the medical inspector enters the room, have the children, on whose desks the cards are placed, distribute the cards to the pupils of the row.

You are to see that the schoolroom is kept quiet during the examination, and that the rows of children are kept moving, so that during the third part of the inspection there are never less than five pupils in front of the examiner. The pupils are to be employed at some task that does not require your entire attention.

Please reread the italic sentences on this sheet just before the inspection begins in your room.

The medical inspector's instructions are on a 3 x 5 card, in the following form:

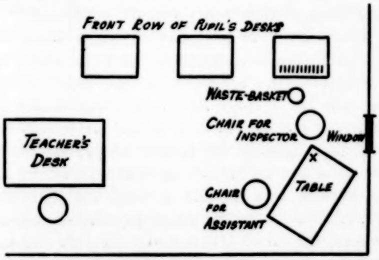
3.

MEDICAL INSPECTOR'S CARD.

Front of Room	—		Heart
Desk	—	Sight	General appearance Skin of hands Rachitis
Window	1	Sight	Skin of face Eyes Nose, adenoids cold Fractures
	2	Sight Touch	Anemia Nutrition
	3	Sight with Stick	Teeth Throat Tonsils
	4	Stick Sight Smell	Hair (Pediculosis) Ears Glands

The details of the arrangement of furniture in the room are very important, as will be made clear when the method of inspection at the window is explained. If the furniture is correctly placed there will be no confusion of the pupils in getting to the inspector, leaving the card in the proper place and returning to their seats, and the endless coaching to get them near enough to the examiner will be avoided.

Generally, a window on the right hand side and in the front of the room is chosen. The inspector's chair is placed back to the window, with a small table on his left hand, a waste basket on his right and a desk just beyond the waste basket. The tongue depressor sticks are arranged in piles of five or six on the desk, at the inspector's right hand.



When for any reason it is impractical to use the small table, the school room table or even the teacher's desk may be used. If the left hand side of the room is to be used, the furniture arrangement will, of course, be reversed.

On completion of the room arrangement the actual inspection begins. This is carried out in three separate procedures, as suggested by the Medical Inspector's Card.

1. In front of room. 2. At pupil's desk. 3. At window.

1. A line is formed in front of the room. The inspector listens to two or three heart beats in each case. When pupils have once been examined for heart murmurs, they are not reëxamined the following year unless their health cards show some severe illness or contagious disease since the last examination. When murmurs are found. as is the case with other serious abnormalities, the pupil is more thoroughly examined, in the school office after the entire examination for the building is completed. This saves time and avoids calling the attention of other pupils to the defects of an individual.

2. The pupils are now told to place their hands on top of the desk. The medical examiner passes up and down the aisles, examining the hands for skin affections and for evidence of rickets.

3. After completing the heart examination and the examination of pupils in their seats, the physician takes his place in front of the window and explains to the pupils just what they are to do at the "window inspection," something as follows: "You will come to me in rows, beginning with the last row. When you get to me place your card on this corner of this table. Go to your seats through this aisle, around the back of the room." This method places the health card in front of the assistant at just the right moment and brings the children close to the inspector without constant coaching, and gets them to their seats without confusion.

There are four processes in the window inspection; the divisions are made in order to concentrate the attention on one part of the anatomy at a time, and to use the senses as singly as possible, as this makes for concentration, thoroughness and speed. In practice these processes are so rapidly performed that to an observer it appears like a tooth and hair inspection only. As the pupil approaches the examiner, the latter observes the condition of the skin of the face, whether or not glasses are worn, or if there is strabismus, blepharitis or conjunctivitis, etc. He also notes whether the child has a cold or if there is any nose abnormality or signs of adenoids. At this instant the presence of fracture and other trauma is noted. When the pupil reaches the examiner, sight and touch are used to determine anemia and nutrition. The probability of anemia is judged by the color of the skin and lips, the inverted eyelid, and the mucous membranes of the mouth. Nutrition is judged by the child's appearance and by the feel of the right arm, grasped by the examiner's left hand. The wooden tongue depressor is used in examining the mouth conditions, teeth, throat, and tonsils. It is also used in the examination of the hair for pediculosis. This examination and that of the ears and glands are the final ones at the window, and must be so conducted that the pupil, on its completion, is facing the aisle through which he is to return to his seat. This is accomplished by examining the left side of the head and neck and left ear first, then the right side. With furniture arranged as described, this starts the pupil for his seat without confusion.

Immediately on completion of the examination the list of names of defective pupils is secured from the teacher, and the examiner and assistant pass to the next room. The defective children are examined in the school medical office, together with any doubtful cases the inspector may have noted, at a convenient time after the entire general inspection is completed. No questions are asked at the examination; sight and touch, hearing, smell, and the teacher's words are depended on for information.

In 1915, fourteen hundred and fifty-four pupils were examined in ten hours and fifteen minutes. This means that four children were examined every minute for every condition on the clinical card, except hernia. The assistant, with nine hundred and ninety-nine of these pupils, had never assisted at a medical inspection before. In 1916 and 1917, with greater familiarity with the details of the examination and assistants with more experience, the time consumed was somewhat less. These figures are for the regular inspection, and do not include reëxamination.

This method of examination is obviously imperfect, but the whole method of school inspection, in Worcester at least, is imperfect and will remain so until time is spent in standardizing and coördinating records and methods, and until sufficient medical inspectors and nurses are adequately paid to conduct properly the general inspection, as well as the daily inspection. This method, however, has three great advantages: first, it is very rapid; second, it is comparatively thorough; and third, it is very flexible.

As to rapidity, a room of forty pupils can be examined in from fourteen to seventeen minutes. A school of four hundred and eighty pupils can be examined in less than three consecutive hours, or if one room is taken daily, not over three hours and forty minutes should be consumed for the building. A group of four school buildings, having collectively fifteen to sixteen hundred pupils, can be examined in four consecutive forenoons; no teacher need use over five or, at the most, eight minutes of her time. The total time for each pupil away from school work is only about three or four minutes.

As to thoroughness; of the twenty-eight conditions for which examination is required by the Worcester Board of Health, twenty-seven are examined for. We are not permitted to strip children, hence examination for hernia is omitted. As to the other twenty-seven conditions, the examination is thorough enough to detect any abnormality that can be detected by observation. Questioning young children is impractical; it consumes much time and secures, at best, very unreliable information. In the secondary examination, any doubtful cases are reëxamined, as well as those children referred by the teacher. This prevents error and assures the sending of pathological cases only to the family physician, to the specialist, or to the hospital. The records kept allow comparison of the individual's condition, of the condition of a given room or of a special class, as well as the general conditions regarding health in the school building from year to year.

As to flexibility, one room or twelve may be examined in a forenoon, special attention may be given to one or more conditions if desired, and the secondary examination enables the examiner to study or to attempt the correction of any special abnormality or class of abnormalities.

SUMMARY.

1. This method of examination is very rapid and flexible, and comparatively thorough.
2. Each person taking part is informed in writing, just before the inspection begins, of the method of procedure, the part they are to take in the examination being clearly stated.
3. The light and furniture arrangement must be correct as to detail, if thorough and rapid work is to be performed.
4. Dividing the inspection into three distinct parts, aids the inspector in concentrating one or more senses steadily on one part of the anatomy. He consequently does better and quicker work.
5. The information obtained from the teacher in a minute or two would require many times as long to acquire from the individual pupils, if, indeed, it was possible to secure it at all.
6. The secondary examination is a most valuable part of this method.

GUNSHOT WOUND OF THE POSTERIOR CORD OF THE BRACHIAL PLEXUS.

By James K. Young, M.D., F.A.C.S., Philadelphia,

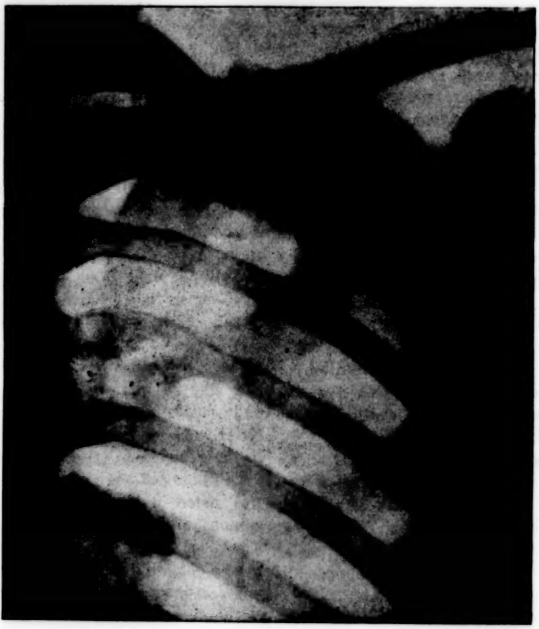
Associate Professor of Orthopedic Surgery, University of Pennsylvania; Professor of Orthopedic Surgery, Philadelphia Polyclinic; Orthopedic Surgeon, Philadelphia General Hospital.

The following interesting case of gunshot wound of the posterior cord of the brachial plexus contains so many interesting features, and treatment has proved so convincingly satisfactory, that it is thought worthy of recording.

The patient, a young man of 24, applied for treatment at the Philadelphia General Hospital, offering the statement that he was the victim of a gunshot wound resulting in paralysis of his right arm. He asserted that five months previously, he had been shot through the right shoulder by means of a steel-jacketed revolver bullet. Upon examination it was found that the missile had passed under the middle third of the clavicle, and that its path of exit had been through the infraspinous area of the scapula, and that it had fractured the fourth rib posteriorly, about two inches from its attachment to the vertebrae. (See x-ray cut.)

Beginning at the right upper extremity, there was noted wasting of the supra- and infraspinous muscles and also of the deltoid. The acromio-clavicular articulation was unduly prominent, likewise there was atrophy of muscles on the anterior humeral surface, especially of the brachialis anticus, with contraction of the biceps, causing the forearm to be flexed upon the arm at an angle of 40°. On the extensor surface, there was noted wasting of the triceps and of the extensor muscles of the back of the forearm, causing a peculiar flattening, as compared with the opposite arm and forearm. There was wasting of the muscles on the flexor surface of the forearm, and the wrist assumed the appearance of wrist-drop. Upon the dorsal surface of the hand, the tendons over the metacarpal bones were prominent, due to deep depressions between them; this depression was especially well marked between the first and second metacarpal bones. Upon the palmar aspect of the hand there was wasting of the thenar eminence, contraction of the second, third, fourth and fifth fingers between the first and second phalangeal articulations, and most prominent in the fourth and fifth fingers.

So far as movement was concerned, the patient could abduct the arm to a right angle with the trunk, but not to the same degree as on the unaffected side. Rotation of the shoulder could be fairly well accomplished; he could easily adduct the arm, and move it readily forward and backward, showing the integrity of the teres major, pectoralis major and latissimus dorsi muscles. He was enabled to supinate the forearm to the extent of 85°, and in doing this, the tendon of the biceps could be discerned in motion. The forearm could not be pronated, and by effort all that the man could accomplish was a position midway between pronation and supination. It was impossible for him to effect perfect flexion of the wrist on the forearm, but he could adduct the hand toward the ulnar side and then flex it on the forearm. This proved the flexor carpi ulnaris to be normal. He was unable to abduct toward the radial side, and then effect flexion of the hand or forearm, showing loss of power in the flexor carpi radialis. He could extend his hand to a plane on a level with the forehead, but he could not hyperextend it.



Wound of Exit, Showing Comminuted Fracture of the Fourth Rib, Posteriorly.

In studying motion in the hand, he could adduct the thumb but he could not abduct it; he was unable to flex the first phalanx on the first metacarpal bone, or the second phalanx of the thumb on the first phalanx of the thumb; nor could he bring the thumb toward the little finger, showing loss of power in the opponens pollicis muscle. Because of loss of power in the extensor longus and brevis minimi digiti, it was impossible to extend the little finger, although he could adduct that finger quite well. There was fairly good motion in the extensor indicis muscle. In the metacarpophalangeal articulations, there was power in the fourth and fifth, very little motion in the third, and none at all in the second. In the joint between the first and second phalanx, there was a labored motion in the index and middle fingers, but the presence of very good movement in the ring and little fingers. In the joint between the second and third phalanx there was no motion in the index and middle fingers, some motion in the ring and little fingers. Extension of the fingers was possible because of beginning contractures at the joint between the first and second phalanx, most marked in the ring and little fingers.

From the history given by the patient, and from the neurological examination that he had undergone, the condition was diagnosed as one of laceration or division of the posterior cord of the brachial plexus, and it was thought best to suture the cut ends of the nerve and thus restore the continuity of the cord. Let it be remembered that the posterior cord of the brachial plexus lies behind the second portion of the axillary artery, the pectoralis minor dividing the axillary artery into three arbitrary divisions, the first portion of the artery above that muscle, the second part beneath the muscle and the third part below it. The posterior cord of the brachial plexus, after leaving the neck, passes behind the clavicle and the subclavius muscle, and latterly enters the axilla, being external to the first portion of the axillary artery or that portion above the pectoralis minor muscle. *In the second part of the course of the axillary artery, it completely surrounds that vessel, one cord lying upon the outer side, one upon the inner side, and one below it.* It is for the latter reason that ligation of the axillary in the second part of its course is held by many surgeons to be impracticable, impossible in many instances, and fraught with very great danger. It is for the same reason also that it is extremely difficult to reveal the posterior cord of the brachial plexus for the purpose of anastomosing its ends after traumatic division. In truth, many of the most recent works on surgery offer the statement that ligation of this part of the axillary is not even to be considered. After carefully weighing all the facts, however, it became apparent to the writer that he would violate precedent by making an avenue of approach through this forbidden path, and after numerous dissections and study one of three procedures presented itself for consideration: division of the clavicle, division of the pectoralis minor, or by operating through the axilla. The second of these, or division of the pectoralis minor muscle, was decided upon.

I made an incision six inches in length (15 cm.) and one and one-half inches (4 cm.) below the clavicle, separated the fibers of the pectoralis major muscle, and exposed the pectoralis minor, which was divided, and this brought into view the axillary artery, partly covered by the coracobrachialis muscle. Both of the latter structures were displaced outwardly by retractors, exposing the posterior cord of the brachial plexus. Instead of the cord being divided, I found it surrounded by inflammatory products. I thereupon freed it from surrounding structures; but no layer of fat was placed around the nerve—a procedure ordinarily intended to maintain the integrity of nerve tissue from adhesion to adjacent structures and vessels. The pectoralis minor muscle was then carefully sutured and the wound was closed and dressed. The progress of the case from that time forward was uneventful. A thorough examination two weeks later revealed sensation restored in all the previously affected areas, and the patient now has extensor power in the hand (showing muscle restoration), except for an atrophy of some of the interosseous muscles on the dorsal aspect of the hand. When first examined, it is worthy of remark, it was seen that there was total loss of power in the median nerve, some loss of power in the suprascapular nerve, and some involvement of the musculospiral and of the radial nerve.

In conclusion, I wish to express my thanks to Dr. H. C. Swartzlander for working up the case; and to Dr. A. M. Sharp for the neurological examination—both resident physicians at the Philadelphia General Hospital.

THE USE OF AND VALUE OF STATISTICS.

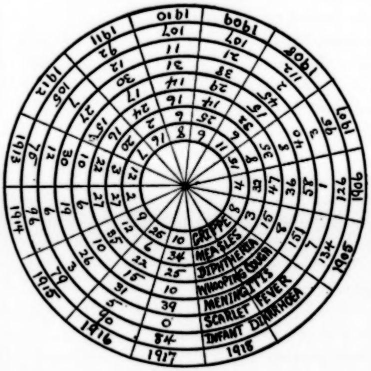
By D. M. Lewis, M.D., New Haven, Conn.,

Epidemiologist, Board of Health.

I believe that the universal detachment of statistics concerning diseases, especially of the communicable variety, in terms of prevailing circumstances and conditions, is perhaps the greatest factor in preventing the control of the diseases. I have shown that there is an unappreciated interlocking of the subject in investigations during 1916.[1]

Discussion of the introductory sentence may be well illustrated by two examples, both from a metropolitan city. During the latter part of the year past, statistics were published showing that the high cost of milk was responsible for a sudden high rate of infant diarrhea. With a sudden rise from a maximum of 71 weekly for July, the first week in August showed 225. The statistics showing a shortage of and a change to relatively poorer grades of milk among an investigated number of families gave evidence that this factor was the cause of the increased number of infant diarrheas. In itself there is an unfortunate absence of data of the investigations, as being in terms of those having diarrheas, as contrasted with those who did not and were not on a change of milk. The keynote is the following: statistics in terms of yearly and seasonal frequency would have brought out the following points. The sharp rise of 1917 was but one week later in time to a similar sharp rise in 1916, in turn paralleled by one in 1915. During then the months of August and September, with a maximum yearly in mid-August, the deaths in 1915 were approximately 50% greater than in 1916, and somewhat in excess in 1917 over 1915. On record that 1916 was their lowest for years, due probably to quarantine procedures for poliomyelitis; it is noteworthy that from mid-October, 1917, on, the weekly record was much better than that for 1916. Now, if we examine the weekly record of the deaths from each and every communicable disease for the three years, there may be found one other disease which is an exact parallel by weeks and by years, namely, whooping cough. The same statistics to explain whooping cough would be untenable. The second example is more recent, giving publicity to the fact that a higher rate for tuberculosis in 1917, after two lower years, must be referable to the food situation and a need for education as to better food ratios.

If now we examine the statistics shown by me in field work there is evidence that an epidemic of grippe is followed by a frequency of poliomyelitis and meningitis, then one of measles followed by diphtheria and whooping cough. Secondly, I can now show that the majority of the whooping cough cases were measles cases of the recent measles epidemic. Further, that the tuberculous meningitis under age five, in the majority of investigated cases, was the aftermath of a recent measles. Lastly, that a frequent finding was that the carriers of these diseases were cases of previous years, but at this time apparent cases of grippe. If we chart, then, our deaths from the communicable diseases for a period of years to reach a similar year period of an epidemic, they may be made in the form of a wheel of chance. With measles epidemic in this city in 1917, a similarly severe epidemic occurred in 1906. Having the fact that a frequency of grippe or influenza rather regularly preceded the measles waves, which confirmed my field observations, placing grippe as the hub and following it with measles, there was evident a wheel of certainty of the waves of infections, with one exception. The grippe figures for 1907 were too high or those for 1908 were too low. Examination of the deaths for those two years showed that 14 of the 15 in 1907 were over age 40, contrasted with 6 of the 11 in 1908. Inasmuch as pneumonia and influenza in the older generations were, and even now frequently are, synonymous, it is reasonable that the year with the greater proportion of deaths in children and young adults from the disease was the year of greater prevalence. With 1908 as the year of probable greater prevalence, there is a very regular sequence of grippe and meningitis, followed the following year by measles and diphtheria, whooping cough and infant diarrhea accompanying generally the measles. There is, then, more than a suggestive interlocking of dependency of the diseases; there is a use and a value which is prac-



tical. More than suggestive, also, are the results of such practical use as shown by the results in these diseases other than measles for 1917 in terms of prevailing previous waves of other years. There is evidence further that the control of respiratory diseases in general may be had on the same basis. In that failure to control such diseases represents one of the most important problems facing health authorities, I believe that investigation of similar statistics will give the essential basis for control of tuberculosis, for example, for the following reasons, as contrasted with the statistics of food ratios. During and following an epidemic of grippe, a board of health laboratory is flooded with sputum specimens showing streptococci and tubercle bacilli in previously latent or in early fresh suspected cases. Secondly, grippe on tuberculosis is notoriously fatal, as contrasted with uncomplicated tuberculosis, which is easily rendered latent. Thirdly, it may be that tuberculous meningitis and tuberculous pneumonia are the activation of a latent focus by measles. Such statistics offer wide opportunity for more good work by the statisticians of our insurance companies when properly carried out. Until so reasonable a lead is disproven, I believe that more enlightenment may be given the control of tuberculosis in terms of both past and present practice than by any statistics of varying conditions existing at any particular time in terms of personal surroundings.

It is said that we are in an age of reason. If tradition must go, it is possible that statistics based on reason may open up any and all previously unsolved problems.

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Society Report.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Meeting of Wednesday, January 2, 1918, at 8 o'clock. Dr. Thomas R. Neilson in the Chair.

ITALIAN MEDICAL ACTIVITIES IN THE WAR.

Dr. Victor G. Heiser, Director of the East, International Health Board; Member American Red Cross Commission to Italy: It is generally understood that the Italian Army consists of at least 4,000,000 men and that the number of hospital beds is approximately 1,000,000. Just what it means in two years to expand a country's hospital service to these huge proportions can be better appreciated when it is recalled that in the entire United States, with a population almost three times as great as that of Italy, there are only 300,000 beds. In spite of this vast achievement, the work accomplished by the Italian medical profession since the beginning of the war has attracted to itself but little attention in this country. While probably none of the Allies fighting in Europe has received less aid other than financial help from outside their own borders, the medical men of Italy almost invariably were loath to speak of their achievements. It was characteristic of the Italian medical service to achieve results and then, perhaps, talk about them. The equipment for the care of the sick and wounded has been provided almost entirely in Italy. Mobile hospitals of 100-bed capacity, which can be taken down and transferred 75 miles and set up and put in service again within 24 hours, are in use; the entire equipment being transported on five camions (motor trucks) and three touring cars. New operations, particularly in dental and lung surgery, new instruments without number, have been developed. The Italian medical service is presided over by an official who has his office with the Minister of War at Rome. Under the chief medical officer there is stationed with each army a principal medical officer who has almost determining powers in directing the medical work of the army with which he is stationed. The care of the wounded is undertaken jointly by the Italian Red Cross and the Sanitare Militare, or Army Medical Service, medical aid being rendered through the following seven classes of agencies: .

1. The Posti Medicazione. These are the most advanced dressing stations for emergency service, and they are located usually in dugouts in trenches very close to the front.
2. The Sezione Sanita. These are located one or two kilometers behind the front, are dispensaries and more fully equipped than the preceding.
3. Ambulancia di Montagna are located from two to five kilometers behind the front; the most advanced point reached by the Italian Red Cross.
4. The Stazione di Sanita are somewhat larger and better equipped than the Ambulancia di Montagna.
5. The Ospedale di Campo, or Field Hospitals, are at accessible points somewhat farther back: of 500 bed capacity and are used also as distributing center where cases are classified and sent to various special hospitals.
6. Ospedale di Tappa are base hospitals several hundred kilometers behind the lines with a bed capacity of from 20,000 to 40,000.
7. Ospedale di Reservo are institutions throughout the cities of Italy which have been made available for soldiers.

For each army there are a number of large quarantine stations provided with steam disinfecting apparatus or sulphur-dioxide chambers. Every patient before admission to the general hospitals, and all prisoners, are passed through stations of this kind. Hospitals afforded by the Italian Red Cross consist largely of tourist hotels, schools and other buildings adapted to the purpose; those provided by the medical service consist of existing army hospitals, military buildings, or entirely new structures. The latter are usually one-story pavilions about 14 feet high, 18 feet wide, of any desired length, constructed of angle iron placed on 6-foot centers, with the intervening space filled in with hollow tile, resembling that used in fireproof construction in this country. The roofs are also of tile. They are cheaper than tentage, are cool in summer and can be kept warm in winter. The decreased use of cavalry has made available large numbers of cavalry barracks. In one of these at Udine a single ward has 300 beds. Hospitals are being located increasingly nearer the front and in most unusual places. Thirty or forty feet under ground and directly under a point where a battle was raging, it was a novel experience to see the hospital routine in good operating rooms and wards, supplied with artificial ventilation and modern hospital equipment. On the other extreme, at an elevation of 6000 feet in the Dolomites, we came upon a hospital of 30 bed capacity hewn out of the side of a cliff. The two sides and back wall were of stone, and the mountain range at this point was so narrow that through a hole bored in the back wall of the hospital it was possible to look into the Austrian trenches on the other side of the mountain. After receiving emergency treatment, patients were sent to the railhead on the marvelous *teleferica*, which often go from mountain-top to mountain-top over chasms thousands of feet deep.

Specialization has been carried to a high degree; at Udine we saw 1500 fracture cases in a single hospital; at other hospitals we saw only gunshot wounds of the chest. Professor Morelli has invented an improved aspirator for draining fluid from the chest. Pressure within and without the lungs can be accurately read on a gauge, and through the development of special technic, which, among other things, permits the lungs to remain collapsed during definite periods, he has been able to produce some startling results in lung surgery. In 100 recently completed cases there had been no mortality, and Professor Morelli believes it entirely feasible to keep the mortality well under five per cent. in all gunshot wounds of the chest.

Practically every hospital throughout Italy has one or more x-ray machines, all manufactured in their own country. The smooth organization of the hospital train service was one of the most striking features which we saw in Italy. Often we saw a train back into a sidetrack next to a hospital, take on board fully 350 wounded, and in less than thirty minutes proceed on its way. Everything worked with clock-like precision. One is particularly impressed by the amount of new apparatus invented to meet the needs of war cripples, and almost unbelievable progress has been made in appliances and methods for the reëducation of lost functions. Great stress is laid upon specialized forms of physical drill for rehabilitating nerve function, and remarkable results were shown us. Dr. Guali, at the Villa Fiore, has devised excellent improvements in artificial limbs, also a clever apparatus for registering the pressure of the artificial foot. At other institutions, a trade suitable to the individual patient is taught. Italy has established huge stations for the return of her soldiers from Saloniki and Albania. In view of 100,000 cases of malaria invalided back, the importance of such quarantine stations is manifest. A comparatively small amount of tuberculosis has been encountered in the Italian army, but it is said that 30,000 tubercular Italian prisoners had been returned from Austria. The x-ray diagnosis is a routine procedure in this disease. Among other activities with which the medical service is associated is an active reclamation department, which provides for the collection and repair of articles found on the battle field. The very general employment of huge fireless cookers assures to the soldier absolutely hot meals, in whatever position he is. Huge shops for repairing these cookers form part of the system. The prison camps at the front consist of barbed wire enclosures, with good tents and excellent cooking arrangements. They are divided into three sections: the first being that in which the prisoners are bathed, their clothing disinfected; in the second, stools specimens are taken for cholera, dysentery and typhoid. After three days those whose stools are negative are sent into the third section, where they stay until sent to the interior. For the officers, houses of a semi-permanent character are provided. One is greatly impressed by the kindliness and consideration shown prisoners of all classes. The food is the same as that given to the Italian officer or soldier of corresponding grade. No work is required of officers. No actual official records of venereal disease were available. The disease is stated to have been reduced to almost negligible proportions. A complete medical school has been established near the front line trenches. During the months when the army was comparatively inactive, all medical students in the service were ordered to San Giorgio di Nogaro, at which point professors from various medical schools who are in the army, also assembled, being assigned to look after the sick in the vicinity. This enabled them to use the clinical material for the benefit of the students. Finally, it may be stated, we were much impressed by the excellent care given the wounded, and the spirit of service manifested by the medical officers. They were on duty early and late, and a wonderful fellowship and mutual helpfulness prevailed.

Book Reviews.

Skin and Venereal Diseases. The Practical Medicine Series. Vol. IX. Edited by Oliver S. Ormsby, M.D., and James Herbert Mitchell, M.D. Series 1916. Chicago: The Year Book Publishers.

"The present volume is one of a series of ten issued at about monthly intervals and covering the entire field of medicine and surgery." This series is published primarily for the general practitioner, but at the same time the arrangement in several volumes enables those interested in special subjects to buy only the parts they desire. The volume strives to present as far as possible the more important yearly contributions to the knowledge of cutaneous medicine and genito-urinary diseases.

Clinical Lectures on Infant Feeding. Boston Methods. By Lewis Webb Hill, M.D., Junior Assistant Visiting Physician, Children's Hospital, Boston; Alumni Assistant in Pediatrics, Harvard Medical School. Chicago Methods. By Jesse Robert Gerstley, M.D., Instructor in Pediatrics, Northwestern University Medical School; Associate Attending Pediatrician, Michael Reese Hospital, Chicago. Philadelphia and London: W. B. Saunders Company. 1917.

During the summer of 1916 two courses of lectures and clinics on Pediatrics were given to the physicians of North Carolina under the joint auspices of the University of North Carolina and the State Board of Health. One of them was given by Dr. Lewis Webb Hill of Boston, the other by Dr. Jesse R. Gerstley of Chicago. Dr. Hill received his training in Boston, Dr. Gerstley in Chicago and Germany. Their points of view and their teachings on infant feeding and allied subjects are, therefore, quite different. They thought it worth while, for these reasons, to combine their lectures in one volume, so that the teachings of the two schools of infant feeding might be readily compared. They state in their preface that they are presented in a spirit of coöperation rather than of rivalry, and of construction rather than of destruction.

Both points of view are well presented. At the first glance they seem radically different, but more careful analysis shows that they are fundamentally much the same, and that many of the apparent differences are simply in the use of terms and in classification. Being a member of the "Boston School of Pediatrics," we naturally feel that the methods advocated by Dr. Hill for meeting the various problems presented are superior to those advocated by Dr. Gerstley, who represents another "School." We are inclined to think, however, that in actual practice, the methods adopted by the two would, in many instances, not be very different.

We are glad to see these different views presented together between the same covers and in such a friendly spirit. We also feel sure that if pediatrists would quarrel less and talk infant feeding over more in a mutual spirit of respect and tolerance, there would be found to be much less difference of opinion than there now appears to be, and that our knowledge of the subject would be materially advanced.

White and Martin's Genito-Urinary Surgery and Venereal Diseases. By Edward Martin, A.M., M.D., F.A.C.S., John Rhea Barton Professor of Surgery, University of Pennsylvania; Benjamin A. Thomas, A.M., M.D., F.A.C.S., Professor of Genito-Urinary Surgery in the Polyclinic Hospital and College for Graduates in Medicine, Instructor in Surgery, University of Pennsylvania; and Stirling W. Moorhead, M.D., F.A.C.S., Assistant Surgeon to the Howard Hospital, Philadelphia, Pennsylvania. Illustrated with 422 engravings and 21 colored plates. Tenth edition. Philadelphia and London: J. B. Lippincott Company. 1918.

The first edition of this book appeared over twenty years ago and was followed by eight others which answered the demands made for them from time to time. The present edition—the tenth—appears seven years after its immediate predecessor, and those years have proved years of great and varied progress in urological knowledge and attainment. The present book, dedicated to one of its original authors, Dr. J. William White, now dead, has been, therefore, practically rewritten to meet the changed conditions at this time.

Changes in the treatment of syphilis by the more modern methods have been thoroughly discussed and the authors' sensible and conservative ideas have been carefully and fully expounded. The modern laboratory knowledge pertaining to urological affections of all sorts has been incorporated into various sections of the book; and vaccines, renal tests, electrical treatment of bladder tumors, modern prostatic operations—are a few of the many more recent advances in urological knowledge which have been given thorough and prolonged consideration.

The book is the last word as a urological textbook at the present time. It contains much of Dr. Martin's charm as a writer of English, and is a most worthy successor to the volumes which preceded it. The publishers have produced the book in a manner worthy of its importance.

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126 Massachusetts Ave., Corner Boylston St., Boston, Massachusetts.

THE CONTROL OF VENEREAL DISEASES IN MASSACHUSETTS.

"I BEGAN to be interested in the problem of venereal disease some thirty years ago, when I became convinced that the spread of sex diseases, if unchecked, would bring about the downfall of our race." With these words, Dr. Charles W. Eliot, speaking to the Committee on Public Health of the House of Representatives of Massachusetts, testified to his belief in the importance of the program set forth by the Massachusetts Board of Health. Army and Navy men, clergymen, representatives of the Federation of Women's Clubs and of the Massachusetts Medical Society, expressed their conviction that this program should be supported. The document upon which the hearing was held (House No. 1320), and which is published in part in another column of this issue of the JOURNAL, provides for the appropriation of $30,000 for the establishment of new clinics or the support of those already established throughout the State for the diagnosis and treatment of venereal disease, for the education of the public in regard to these diseases, and for the printing of instruction sheets and blanks used in reporting such cases.

The campaign against syphilis and gonorrhea, planned by the Board of Health, is primarily a war measure, taken in accordance with the request of the National Committee of Defense. Slowly and unostentatiously, with a beginning which antedated the war, the foundation for this work has been laid. The situation created by the war—the very real danger to our troops from infectious sources outside the "safety" zone which surrounds each cantonment—has made possible the immediate launching of a far more ambitious campaign. The already partly dissipated mist of public prudery which shrouded this question has suddenly been swept away.

No medical man who has at heart the interests of public health can be opposed to a plan so comprehensive and at the same time so sane and moderate as this of the Board of Health. Whether it will succeed or not depends directly upon the whole-hearted coöperation of the medical profession. Here is an opportunity for service for those who are not in khaki or navy blue. "Before the war," said Dr. Eliot, "the incidence of venereal disease in the United States Regular Army was more than five times as great as that in the German Army. Must we admit that autocracy is more efficient than democracy?" The approval by the Legislature of this plan and the loyal support of its principles by the medical profession will go far toward demonstrating that in democracy lies the power to do great things.

◆

IMMUNIZATION AGAINST TYPHUS FEVER.

ALTHOUGH the sanitary progress of most civilized communities has succeeded in eradicating many of the scourges still very common not so many years ago, most of these diseases, especially typhus fever, flourish under such adverse conditions as follow military or other devastations. In Mexico, and particularly in Serbia, until cleared by the American medical expeditions, there has been a great deal of this disease. The recent discovery that the so-called Brill's disease was but a milder type of typhus fever shows that the disease may still crop out anywhere. But there is no reason why these mild cases, if overlooked, cannot give rise to severe infections in others. The identity of the organism concerned in the causation of typhus fever was not known until the isolation of an organism from typhus cases occurring here, by Plotz, and named the Bacillus typhi exanthematici. However, before an organism associated with the etiology of a disease can be said to be the specific agent of that disease, it must carry out the requirements of Koch's postulate, that is, be isolated in pure culture, cause the disease when introduced into the organism and be recovered therefrom in pure culture. Besides, the natural sequence of the discovery of what is believed to be the specific organism in a disease is the attempt to produce immunization against the disease and its treatment serologically. To this end the experiments carried out by the Hygienic Laboratory are interesting, but they do not determine whether this organism is the sole specific cause of typhus, even though it is isolated from the blood of typhus cases. The experiments represented four strains of the Bacillus typhi exanthematici taken from cases of Mexican typhus. Living and dead organisms were injected into rhesus monkeys—into half of the monkeys in the experiment were injected the living, and into the other half the dead, organisms. It was found that neither the dead nor the living organisms caused any reaction in the monkeys. The injections were made intraperitoneally at suitable intervals, and after about 12 days injections of virulent typhus blood were made into vaccinated and unvaccinated animals, the latter as controls. In most of the vaccinated animals the typhus reaction, while present, was somewhat later in arriving than in the unvaccinated ones, although what significance, if any, this fact has, is hard to say. The control, unvaccinated, monkeys, however, reacted quickly to the typhus virus, while the known immune animals did not react at all to the virulent typhus blood. (Public Health Reports, June 1, 1917.) Nevertheless, the failure to produce immunity with an organism about whose specificity there is no doubt, is not unusual, especially where there is a number of strains that enter into the etiology of a disease, as is the case with typhus fever. Wherever there is a number of strains concerned in the causation of a disease, failure is naturally very likely to occur unless the exact strain of organism is employed in the production of vaccines or sera that is concerned in the causation of the particular disease case in question.

MEDICAL NOTES.

SUPPLEMENTARY LIST OF MASSACHUSETTS PHYSICIANS IN THE SERVICE OF THE ARMY, NAVY AND RED CROSS UP TO MARCH 1, 1918.

(Original list published in the JOURNAL of March 14, 1918, compiled by the Massachusetts State Committee, Council of National Defense, Medical Section, of those who had accepted commissions previous to Feb. 1, 1918.)

* Honorably discharged.

† Honorably discharged to enter Regular Army Medical Corps.

Akerly, Arthur W. K.	Boston
Ayer, James B.	Boston
Balch, Franklin G.	Boston
BARROW, ALLEN R., Naval Reserve	Chelsea
Berry, Frank B.	Cambridge
BLAIR, ORLANDO R., Navy	Springfield
Blood, George W.	Fall River
*Browne, William E.	Boston
Burke, John R.	Boston
*Byrne, William R.	Framingham
Chalfen, Samuel E.	Cambridge
Clark, Millard C.	Lawrence
CLINE, SAMUEL, Naval Reserve	Roxbury
CORCORAN, GEORGE B., Naval Reserve	West Sp'fl'd.
Cox, Thomas	Fall River
Crofton, George H.	Worcester
Crothers, Bronson	Cambridge
Curran, George L.	North Adams
Dalton, Stephen J.	Marlboro
*Davis, Charles H.	Hamilton
*Dillenback, Emil U.	Springfield
Donovan, Jeremiah J.	Roslindale
Doucet, Charles S.	Lowell
Dwyer, John E., Jr.	Cambridge
Falk, Jacob B.	Boston
Fennessey, John F.	Dorchester
Fogg, Neil Augustus	Boston
FRENCH, LELAND M., Naval Reserve	Worcester
Galvin, Augustus H.	Springfield
Gillespie, Norman W.	Boston
Godvin, Bernard A.	Boston
GOODPASTURE, ERNEST W., Naval Res.	Boston
Gray, Horace	Boston
HAMILTON, ALBERT J. A., Naval Res.	Boston
Hardy, Wilbert C.	Boston
Harriman, Frank E.	Worcester
HEALY, THOMAS R., Naval Reserve	Newburyport
Hoffman Morris	Boston
Hodgkins Edward M.	Dorchester
Hubbard, Joshua C.	Boston
IRELAND, ALLEN G., Naval Reserve	Arlington
Jacobson, Victor C.	Boston
JENNINGS, CURTIS H., Naval Reserve	Fitchburg
Joslin, Elliott P.	Boston
Kau, En Young	Boston
King, Alfred E.	Watertown
Lacey, Walter H.	Boston
La Liberté, Elie J.	Fall River
Lanman, Thomas H.	Boston
LECLAIR, HORMIDAS H., Naval Reserve	New Bedford
Lyon, Arthur B.	Boston
McCann, Charles D.	Brockton
McConnell, David J.	Greenfield

Medalia, David B.	Boston
Meserve, Edwin A.	Watertown
Milot, Joseph D.	Fall River
Morse, Almon G.	Hingham
Moulton, Allen T.	Roxbury
NEWTON, WILLIAM C., Naval Reserve	Revere
Osborn, Stanley H.	Cambridge
Park, James H., Jr.	Boston
Pastene, Albert A.	Boston
PAYNE, JAMES H., Navy	Boston
Pratt, Ezekiel	Arlington
Putnam, James J., Jr.	Boston
QUIRK, THOMAS C., Naval Reserve	Watertown
Rafferty, Thomas B.	Lynn
†Randall, John A.	Myricks
RIORDAN, ARTHUR H., Naval Reserve	Indian Orchard
Roderick, Anthony J.	New Bedford
Rudman, Israel E.	New Bedford
Sargent, Arthur F.	Boston
*Segal, Joseph	Jamaica Plain
*Shepley, Luther J.	Fall River
Shortell, Joseph H.	Boston
Smith, Alfred C.	Brockton
Smith, Ernest E.	Webster
Solomon, Harry C.	Jamaica Plain
Sowles, Horace K.	Boston
Stack, John J.	Boston
*Sweeney, John G.	No. Cohasset
Swope, Oscar C.	Kingston
Thomas, Abraham F.	Newburyport
Thomas, Harold	Wollaston
Tomb, Everett H.	Cambridge
TRICKEY, CHARLES T., Naval Reserve	Tewksbury
Turner, Ralph W.	Boston
Van Camp, Thomas H.	Boston
Walker, Harry A.	Somerville
Ward, John C.	Worcester
Wickham, Thomas W.	Boston
Willey, Walter B., Jr.	Brighton
Woody, McIver	Boston
Worthington, Arthur M.	Dedham

Bulletin of the Canadian Army Medical Corps.—The Bulletin of the Canadian Army Medical Corps, a new medical paper issued from the office of the Dominion Medical Service, has just appeared, and promises much interest. The issue for March contains original articles chiefly concerning the diseases most prevalent in the war, a report of the proceedings of Clinical Societies of the C. A. M. C., administrative notes, and Corps news.

Major J. D. Morgan contributes an article on "Spur-like Formations of Bone Following Amputation"; Major F. B. Bowman describes a new disease known as "Trench Mouth"; Major I. J. Rhea and Captain R. H. Malone present "Studies on Streptococci Recovered from Sick and Wounded Soldiers in France"; Captain A. B. Jackson treats of "The Importance of the Early Diagnosis of Syphilis"; Captain A. B. James has written an article on "An Abortive Treatment for Gonorrhea."

Plague in Nankin.—Report from Pekin, Thursday, March 21, states that fifteen deaths from the plague have occurred at Nankin, China.

WAR NOTES.

Camp Health Better.—Continued improvement of health conditions in the Army camps and cantonments in the United States is shown in the report of the Surgeon-General for the week ending March 1. The death rate—6.6 per 1000—is the lowest recorded since Nov. 16, 1917. Pneumonia continues to decline in all the camps.

Woman Physician is Appointed to Service in France.—Dr. Alfreda B. Withington of Pittsfield, a practising physician of that city for the past twenty years, is to enter active service under appointment of Major Grayson M.-P. Murphy, former head of the French Red Cross Commission, and will report for duty in France in connection with tuberculosis work carried on under the combined auspices of the Red Cross and the Rockefeller Foundation. She expects to sail shortly.

Dr. Withington for years has been secretary-treasurer of the Red Cross in Berkshire County and active in keeping its appeals before the public. Through her leadership many thousands of dollars have been raised in western Massachusetts for Red Cross work.

Dr. Withington from the beginning has been identified with the Pittsfield Anti-Tuberculosis Association, which maintains a tuberculosis camp in West Pittsfield. She has been on the hospital staff of the House of Mercy since 1902, and is a member of the Berkshire County Medical Society. Her specialization in tuberculosis practice equips her for the service abroad—a service that is growing in importance with the development of the war. She served for one season (1907) with Dr. Grenfell in Labrador.

A graduate of Cornell University, where she took a post-graduate course, and of the Woman's Medical College in New York, Dr. Withington later took special courses in the hospitals in Prague and Dresden.

Medical Awards of the Victoria Cross.—Announcement is made of the following awards of the Victoria Cross to medical officers in the British Service:

"Capt. Noel Godfrey Chavasse, V.C., M.C., late R.A.M.C., attd. L'pool R.

For conspicuous bravery and devotion to duty when in action.

Though severely wounded early in the action whilst carrying a wounded soldier to the dressing station, Capt. Chavasse refused to leave his post, and for two days not only continued to perform his duties, but in addition went out repeatedly under heavy fire to search for and attend to the wounded who were lying out.

During these searches, although practically without food during this period, worn with fatigue and faint with his wound, he assisted to carry in a number of badly wounded men, over heavy and difficult ground.

By his extraordinary energy and inspiring example, he was instrumental in rescuing many wounded who would have otherwise undoubtedly succumbed under the bad weather conditions.

This devoted and gallant officer subsequently died of his wounds."

"T. Capt. Harold Ackroyd, M.C., M.D., late R.A.M.C., attd. R. Berks R.

For most conspicuous bravery. During recent operations Capt. Ackroyd displayed the greatest gallantry and devotion to duty. Utterly regardless of danger, he worked continuously for many hours up and down and in front of the line, tending the wounded and saving the lives of officers and men. In so doing, he had to move across the open under heavy machine gun, rifle and shell fire. He carried a wounded officer to a place of safety under very heavy fire. On another occasion he went some way in front of our advanced line and brought in a wounded man under continuous sniping and machine-gun fire.

His heroism was the means of saving many lives, and provided a magnificent example of courage, cheerfulness, and determination to the fighting men in whose midst he was carrying out his splendid work.

This gallant officer has since been killed in action."

The following award of the Albert Medal is also announced:

"The King has conferred the Decoration of the Albert Medal on Surgeon Probationer Robert Sydney Steele Smith, R.N.V.R., in consideration of the gallant services rendered by him. He was medical officer of one of H.M. ships which was torpedoed by an enemy submarine. When the enemy torpedo struck the ship Surgeon Probationer Smith was in the wardroom aft with the 1st Lieutenant. The explosion wrecked the wardroom and rendered the 1st Lieutenant unconscious. All other exits being blocked, Surgeon Probationer Smith piled the wrecked furniture under the skylight, and got the 1st Lieutenant through this on deck. He then attended to a petty officer who was lying on deck with a broken arm and leg, adjusted and blew up his life-belt, and after doing the same for the 1st Lieutenant, got him overboard as the ship was then foundering. The 1st Lieutenant was by then partly conscious, but was again stunned owing to an explosion when the vessel foundered, and when he was picked up by the boat he was apparently dead. Surgeon Probationer Smith applied artificial respiration until the 1st Lieutenant showed signs of life; he afterwards attended to the injured in the boat so far as circumstances allowed, until they were picked up 43 hours later."

WAR AND BIRTH RATE.—For the past four weeks the natural increase of population—the excess of births over deaths—in London has stopped. Last week, according to the Registrar-General, the deaths numbered 1804 and the births 1491, an excess of 313 deaths. In Germany the population figures show a serious death rate. According to the latest published by the Registrar-General, only 282 children were born in Berlin during one week, while 451 people died. In Hamburg the deaths were thrice the number of births, and, taken together, Berlin, Hamburg, Leipzig, Cologne, Dresden, and Breslau show twice as many deaths as births.

DECLINING BIRTH RATE IN SCOTLAND.—The Registrar-General for Scotland, in his quarterly report, states that the births of 26,172 living children were registered in Scotland during the second quarter of the year 1917. These births are 804 more than in the previous quarter, but 3756 fewer than in the second quarter of 1916. It is the smallest number of births registered in any second quarter since 1856. The birth rate for the quarter is 21.6 per thousand, being 0.4 above that for the previous quarter, but 3.4 below that for the second quarter of 1916, and 5.1 below the mean of the rates for the corresponding quarters of the past five years. With the exception of the fourth quarters of 1915 and 1916, and the first quarter of this year, it is the lowest quarterly birth rate ever recorded in Scotland. Of the 26,172 children whose births were registered, 13,312 were male, and 12,860 female, the ratio of male to female births being thus 103.5 to 100. In the previous quarter this ratio was 106.7, and in the second quarter of 1916, 105.7.

HARVARD MEN IN AMBULANCE WORK.—Harvard has a wide lead over all other colleges in the membership list of the American ambulance field service when it was formally taken over by the United States Army recently. Of the 1890 college men who served as ambulance drivers, Harvard provided 311. Yale was second, with 192 and Princeton third with 190. Dartmouth came fourth with 122 men, and Technology furnished 39.

MEETING OF THE GERMAN MEDICAL ASSOCIATION.—The first general meeting, since the war, of the German Medical Association, was held in Leipzig on September 22 and 23, 1917. It was stated that about 24,000 German doctors were engaged on war work, and that about 1000 had fallen in the field. The attacks of the insurance societies on the medical profession, and the prospect of loss of independence by the adoption of a state medical service were discussed. Bitter conflicts with the insurance societies after the war were foreshadowed. With regard to the establishment of dispensaries for the treatment of venereal disease, it was agreed that the medical profession should be adequately represented. Unanimity was also shown in a resolution calling for higher remuneration in every branch of the medical profession, in view of the depreciation of the currency.

Birth Rate in Germany.—Statistics for the year 1916 of the twenty-six German towns with a population of over 200,000 each show a decline of 38.3% in the birth rate as compared with 1914. The figures for August and September, 1916, were, however, better than for the preceding July, a result, it is supposed, of the facilities given to soldiers for Christmas leave.

BOSTON AND MASSACHUSETTS.

Week's Death Rate in Boston.—During the week ending March 30, the number of deaths reported was 250, against 277 last year, with a rate of 16.62, against 17.86 last year. There were 35 deaths under one year of age, against 44 last year.

The number of cases of principal reportable diseases were: diphtheria, 100; scarlet fever, 27; measles, 227; whooping cough, 53; typhoid fever, 1; tuberculosis, 57.

Included in the above were the following cases of non-residents: diphtheria, 35; scarlet fever, 4; measles, 2; tuberculosis, 9.

Total deaths from these diseases were: diphtheria, 1; scarlet fever, 1; measles, 8; whooping cough, 3; tuberculosis, 18.

Included in the above were the following non-residents: diphtheria, 1; scarlet fever, 1; measles, 2; tuberculosis, 2.

Dispensary Fund above $52,000.—The Boston Dispensary has raised more than the necessary fund, according to figures reported by the campaign committee. At least $51,000 have been secured in cash and pledges, and there are many subscriptions of small sums yet to come in. It is probable that the fund may reach $60,000 or more when the final figures are prepared.

Hospital Bequests.—The will of the late Zabdiel Adams Willard of Brookline, Mass., was filed on March 20, for probate in the Norfolk County Court at Dedham, Mass. After providing for several personal beneficiaries, the will assigns one-quarter of the income and ultimately of the principal of the residuary estate, each to the New England Hospital for Women and children, and to the Boston Dispensary.

By the will of the late Henry A. Willis of Fitchburg, the Burbank Hospital receives the sum of $10,000 to establish free beds in the donor's name.

The will of the late Miss Adele G. Thayer of Boston makes a bequest of $25,000 to the Convalescent Home of the Children's Hospital in Wellesley, and also one of $10,000 to the Children's Hospital.

By the recently probated will of the late Mrs. Anna W. Sanborn of Boston and Rockport, the Floating Hospital, Boston, receives $300; the L. M. Haskins Hospital of Rockport receives $300 also.

Dr. John A. Gordon of Quincy makes a bequest of $2000 to the Quincy City Hospital; the Harvard Medical alumni fund receives $200, also the Quincy Day Nursery.

Associated Health Boards Dine in Lynn.—The Associated Boards of Health of the Northeastern District of Massachusetts held their annual meeting recently at the Hotel Seymour in Lynn. Mayor Creamer; Dr. Fritz B. Talbot, appointed a short time ago to the commission for conservation of child life; Dr. Lyman A. Jones, of the State Department of Health; and Dr. John S. Hitchcock, of the Department of Communicable Diseases, were the speakers.

The following officers were elected: President, Dr. George B. Fenwick of Chelsea; vice-president, Dr. George F. Lennon of Haverhill; secretary and treasurer, Dr. Clarence W. Horton of Swampscott; directors, Dr. Walter W. Kingsbury of Malden, Dr. J. A. Jonness of Rockport, and Dr. Loring Grimes of Swampscott.

Reports of Baby Hygiene Association.—Reports of the work done by the Baby Hygiene Association for the year 1917, presented by the director, Dr. J. Herbert Young, at a recent meeting of the trustees, showed that 55,721 babies were cared for, compared with 49,532 in

1916, an increase of 10%. With one exception, all stations began the present year with a larger registration than previously.

"The number of visits of babies to conference was 31,631, an increase of 14% over 1914, notwithstanding an increase of 4% in number of conferences held. A comparison of the years 1915 and 1917, shows in 1917 an increase in number of babies cared for of 16%, in conference attendance 24%, and nurses' visits 29%. This demonstrates that medical and nursing supervision is more than keeping pace with growth.

The number of babies cared for up to their first birthday has been increased over last year, and the average length of supervision was seven months. As the aim of the Association is not to treat sick babies but to keep babies well, the steady fall in morbidity is most gratifying."

Essex County Tuberculosis Hospital.—It is announced that work is well in progress on the new Essex County Tuberculosis Hospital, which is under construction at Middleton, Mass. This hospital, which is being built in accordance with legislative enactment, will have the expense of its construction and maintenance proportionately borne by all the cities and towns of Essex County, with the exception of Haverhill, Lawrence, Lynn, Newburyport, and Salem, which have already made separate provision for the care of their consumptives.

"The building, which will not be completed before fall, will be 780 feet in length, and is divided into a central section and two wings. The wings are for patients, and are each 317 feet long. The administration building is in the front center, and is 60 by 45 feet. Back of that is the dining-room, 40 by 47 feet, with seating capacity for 112 persons. Still further back is the service building, 40 by 60 feet, where will be located the kitchen, bakery, cold storage plant and other annexes of public institutions, and in the upper story the dormitories for the female help.

On the first floor of the administration building will be located the staff offices with the staff bedrooms on the second floor and the nurses' rooms on the third floor. There will be 104 beds in the two dormitories for patients. Additions can be made if necessary in the future.

The building will be of hollow tiles and stucco with slate roof.

The first floor is at an elevation of 176 feet above sea level, while the hill in front of the hospital is 220 feet elevation, and is crowned with a pine grove."

Diphtheria at Wakefield.—Report from Wakefield on March 25 states that within the preceding ten days 14 new cases of diphtheria were discovered in that town, and that three have already proved fatal.

Plans for Crane Sanatorium.—It is announced that the attempt will be made to raise a fund of $100,000, of which $20,000 have already been subscribed, for the completion of the Crane Sanatorium at Rutland, Mass., whose foundations have already been laid. It is intended that this sanatorium shall be administered without profit. Contributions for the fund may be sent to Leonard W. Cronkhite, Merchants National Bank, Boston.

NEW ENGLAND NOTES.

Hospital Fire at Middletown, Conn.—A fire in the west wing of the Connecticut Hospital, at Middletown, Conn., resulted in the death of two patients, with two others missing. The damage to the building is estimated at about $200,000.

Control of Disease in Penal and Charitable Institutions in Rhode Island.—On March 8 the following act in amendment of the existing "Act to Provide for the Supervision, Administration, and Control of Charitable and Penal Institutions" was passed by both branches of the Rhode Island General Assembly. The amendment consists in the addition of Article 4, entitled "Of the Public Health."

"Section 1. In exercising the power and authority to provide for the care of the physical welfare of the inmates, prisoners, patients, and pupils in the several institutions under its control, and for the protection of the public health, the Penal and Charitable Commission shall furnish all necessary medical aid and attention, and shall take all necessary steps to promote the health of said inmates, prisoners, patients, and pupils, and especially to guard them and the general public against all dangerous, infectious and contagious diseases at said institutions.

Sect. 2. The said Commission is hereby authorized and directed, by the attending physician at any of said institutions or by such other physician as it may from time to time designate, to use every available means to ascertain the existence of any dangerous, infectious or contagious disease, including syphilis in the infectious stages and gonococcus infection, among the inmates, prisoners, patients and pupils of said institutions, and to make examination of any of them suspected of having syphilis in the infectious stages or gonococcus infection, and immediately to investigate the source of such infection, and if ascertained, to report the same to the State Board of Health; and any person committed to or received into any of said institutions by, through or under any order of court or any process of law shall be deemed to be an inmate, prisoner, patient or pupil of such institution, as the case may be, within the provisions of this article.

Sect. 3. Every inmate, prisoner, patient or pupil in any of said institutions, who is afflicted with any dangerous, infectious or contagious disease, including syphilis in the infectious stages and gonococcus infection, shall be forthwith placed under medical treatment, and if in the opinion of the attending physician it is necessary, shall be isolated until danger of contagion has passed or until the attending physician determines that further isolation is unnecessary; and if danger of contagion shall not have passed or if further isolation is still necessary at the expiration of sentence or at the time for discharge or release from such institution, such afflicted inmate, prisoner, patient or pupil shall be detained in such institution and continued under medical treatment until the attending physician shall determine that his discharge or release from such institution will not endanger the public health; and during such period of detention, the person so detained shall be supported in the same manner as before such detention.

Sect. 4 provides full powers for the commission in carrying out the preceding sections.

Sect. 5 provides for the keeping of records for statistical purposes."

The passage of this act may be regarded as an advantageous step in the progress towards the intelligent treatment and control of infectious diseases in public institutions.

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Obituary.

WILLIAM ALOYSIUS DUNN, M.D.

Dr. William A. Dunn, for many years a resident of Boston—surgeon, traveler, linguist and recipient of many honors in foreign lands, among them the decoration of knight commander of the Order of Gregory the Great from Pope Pius X—died March 28, 1918, in New York City. Born in the North End, Boston, in 1852, he was graduated as a Franklin medal scholar from the Eliot school at the age of thirteen. He went to Boston College, where he was graduated with the degrees of A. B. and A. M. He was graduated from the Harvard Medical School with high honors in 1875.

Going to Europe he took special courses in medicine and surgery at Paris, Berlin, Vienna and Dublin. On his return Governor Ames appointed him a trustee of the Institution for the Feeble-Minded. He became a surgeon at the Carney Hospital, for six years was a member of the school board and for five years a trustee of the Boston City Hospital. He was first professor of chemistry at Boston College and afterward gave a course there on physiology. During his residence in Boston he was prominent in social and fraternal circles. He was one of the founders of the Clover Club and a member of the Puritan and Algonquin clubs, Boston Athletic Association, University Club, Boston College Alumni Association, Catholic Union, the Boston Medical Observation Society, Boston Medical Improvement Society, American Medical Association, Association for the Prevention of Tuberculosis and the Massachusetts Medical Society.

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Miscellany.

THE CONTROL OF VENEREAL DISEASES IN MASSACHUSETTS.

In another column of the present issue of the Journal is published an editorial comment on the hearing recently held with reference to a Legislative message (House No. 1320) from Governor McCall, transmitting a communication from Dr. Eugene R. Kelley, relative to the control of venereal diseases in Massachusetts. This document is of such interest and importance as to deserve publication in part as follows:

"I am transmitting herewith, with the request that you give it your careful consideration, a communication which I have received from the State Department of Health relative to venereal diseases.

In addition to the plans for medical work outlined in the enclosed letter, I suggest that you give consideration to the program upon this subject recommended by the Federal Government, which has the endorsement of the Massachusetts Committee of Public Safety and our State Department of Health. This recommendation appears to be based on an urgent appeal from the War and Navy Departments, whose representatives have investigated conditions in certain cities and towns in the Commonwealth.

The subject certainly demands a painstaking investigation and proper action, to the end that the spread of loathsome diseases and open commercialized prostitution may be stopped. In this connection I call your attention to the report of the 'Commission for the Investigation of the White Slave Traffic, so-called,' filed with the General Court of 1914, (House document No. 2281 of the year 1914),—a report which for some reason was not acted upon by the Legislature at that time. I would suggest that it be taken from the files and again considered by you in the light of existing war conditions. I believe it will be well to secure the coöperation of all boards of trustees and superintendents of state institutions in the study of the problem, with a view to its solution in a way that will promote the welfare of their inmates.

The old-time attitude which forbade reference to venereal diseases outside of medical circles and technical literature seems to be no longer tenable. These diseases increasingly sap the very sources of national life and efficiency. They should be fought openly, courageously and sanely. In times like these it surely is incumbent upon the nation to take all possible measures to achieve maximum physical, mental and moral efficiency. The objection on account of the inadvisability of expending additional public money for any purpose not bearing upon the efficient conduct of the war is inapplicable. The expenditure of money can be justified strictly on the war efficiency aspects of the subject.

In connection with this suggestion I would call your attention to the following conclusion of the British Royal Commission on Venereal Diseases, arrived at following an exhaustive study of the problem of Great Britain after two years of war:—

'The conditions now existing and those which must follow on the conclusion of the war imperatively demand that action be taken without delay. We realize the claims of economy at the present moment, but we believe that all necessary expenditure will be recouped by the results which can be obtained. . . no short-sighted parsimony should be permitted to stand in the way of all the means that science can suggest and organizations can supply for guarding present and future generations upon whom the restoration of national prosperity must depend.'

I recommend that you appropriate not less than thirty thousand dollars to be expended by the State Department of Health, subject to the approval of the Governor and Council, for the control, suppression and treatment of venereal diseases. SAMUEL W. MCCALL."

The following represents a part of the material contained in the communication from Dr. Kelley, transmitted by the Governor with his message to the Legislature:

"The War and Navy Departments, the Council of National Defense and the U. S. Public Health Service have jointly urged upon the several states the necessity of inaugurating comprehensive campaigns against venereal diseases as a matter of national efficiency. Federal authorities have pointed out that in order to secure the greatest number of effectives in the selective draft the prevalence of venereal diseases must be materially reduced.

Special efforts directed towards the suppression of venereal disease in the civilian districts contiguous to military camps are necessary to protect the soldier from the danger of venereal infection. The success already attained by the Federal authorities in this direction has been most striking. However, the most successful measures instituted and maintained in any such restricted zone will not entirely protect the soldier and sailor because leaves of absence present opportunity to go beyond the limits of these zones to large cities. Here again necessity demands concerted effort to reduce the venereal infections throughout the entire civilian population.

Facts are now available which demonstrate that the greatest problem of military efficiency in reference to venereal disease is no longer, if it has ever been, the problem of the soldier and sailor already in service. Venereal diseases still occur to a regrettable extent among our military forces, but the routine examinations carried out under the Selective Service Law reveal the astonishing and alarming fact that these diseases prevail among our male civil population of military age to a degree far in excess of their prevalence among the military population.

The prevalence of venereal disease in the civil population must be greatly lessened if we are porperly to conserve our man power for combatant service and maintain our industrial supremacy. Industrial efficiency is as important in modern warfare as military efficiency—hence the great military importance of reducing venereal disease prevalence in our industrial and civil population generally.

Totally aside from its military aspects, many other reasons are apparent for a vigorous attack upon this problem. The tremendous economic loss in caring for crippled, blind and insane, the effect of these diseases upon infant mortality, their fearfully depressive effect upon the birth rate, the enormous innocent invalidism of women which they produce, and the need of proper protection of future generations, all demand immediate concerted action throughout the Commonwealth and the Nation.

Massachusetts has already put into effect many of the essential anti-venereal measures outlined by the Federal authorities. It is also true that many of our sister states have done the same and in certain important features made much greater provision, particularly financial provision, for these measures than we have as yet.

For some time past the State Department of Health has been perfecting and gradually carrying out a comprehensive plan for the control of venereal diseases in this Commonwealth. This plan is in line with recommendations since made by the Federal Government. Free laboratory facilities for the diagnosis of syphilis and gonorrhea became generally available with the establishment of the State Wassermann

Laboratory in June, 1915; for the past two years, under authority of a Legislative resolve, the Department has been experimenting with the manufacture of salvarsan, and has now succeeded in producing an unusually pure type of a substance analogous to salvarsan, known as 'arsphenamine.' This substance is now being manufactured upon a factory scale, the output being at the present time about 2,000 doses a month. In December, 1918, the State Department of Health declared syphilis and gonorrhea diseases dangerous to the public health and hence reportable, commencing February 1, 1918. An extensive educational campaign regarding the dangers of venereal disease is being carried on not only in the civilian population but among the military as well, by means of lectures, lantern slides, pamphlets, etc. A health exhibit is also being planned pointing out the menace of venereal disease. A bill introduced by this Department is now under consideration by the Legislature, which forbids the sale or distribution of drugs for the cure or alleviation of venereal disease except upon the prescription of a registered physician. If passed, this bill will put a stop to the widespread and vicious practice of drug-store prescribing for venereal diseases, which means that the infected individual goes away with a false sense of security and becomes a more serious menace than before to all with whom he comes in contact. It has the further result of deferring proper treatment in many of these cases until the time has passed when such treatment can be effective.

The Department has formulated a definite and carefully considered plan for the establishment and maintenance of sixteen venereal disease clinics in thirteen of the largest centers of population throughout the State, as shown by the attached map. These centers will serve as distributing centers for arsphenamine and will provide free, or at a very low cost, facilities for the diagnosis and treatment of venereal diseases, within easy reach of all residents of Massachusetts in need thereof. As an educational and protective force the value of these dispensaries could not be overrated. City governments are already establishing such clinics.

Plans for providing adequate hospital facilities for cases needing hospital treatment are also under consideration.

Briefly, then , there are now available in Massachusetts (1) machinery to give definite knowledge of the number and location of cases of venereal disease in the State, (2) free facilities for the diagnosis and treatment of venereal disease, and (3) a *plan* for the establishment of venereal clinics, the consummation of which will place these facilities in easy and immediate reach of all requiring them.

The carrying out of this plan, however, requires money. It would hardly be fair to expect the cities in which dispensaries are to be located which will serve not only that city but an extensive area besides, to pay the full costs of maintaining such clinics. It is, therefore, hoped that it will be possible for the Commonwealth to contribute to the support of each of these dispensaries to the extent of $1,000 a year. The payment of such a sum by the Commonwealth will serve a twofold purpose: It will give this Department the right to control the distribution and administration of arsphenamine,—a product highly toxic and requiring careful handling,—and it will practically give the Department the power of licensing these dispensaries, since in order to receive the $1,000 and the State arsphenamine, it will be necessary for the dispensary to conform with the minimum rules and regulations formulated for venereal clinics.

It is not intended at this time to request an appropriation sufficient for the creation of a Division of Venereal Diseases. By special effort it will be possible to carry on a large part of the purely communicable disease phase of the work in the present Division of Communicable Diseases, with the Division of Hygiene providing for the carrying out of the educational campaign. It is urgently and absolutely necessary, however, if this work is to be carried on—and surely its importance and value are obvious to all—that the sum of $30,000 be made available.

Primarily, the purpose of this expenditure is to diminish the prevalence of gonorrhea and syphilis, two diseases the results of which now impose a direct cost upon the State of not less than half a million dollars annually and an indirect financial and social burden upon the counties and cities and towns which is incalculable but may be very conservatively estimated to represent in the aggregate millions of money, hundreds of lives and hundreds of thousands of lost days of productive labor annually in the Commonwealth. The sum of $500,000 referred to represents the expense of caring for that portion of our insane asylum population whose insanity is directly and solely due to syphilis. All such cases are now preventable if the disease is recognized early and thoroughly treated by modern methods such as the State Health Department's program contemplates.

The procedure as outlined is believed to be the most directly practicable method for the State to cut down the toll of these diseases, because from their peculiar character they, more than any other communicable diseases, can best be prevented by prompt, early discovery, and proper and thorough treatment. By this means, the opportunities for those already infected to spread the disease can be eliminated, and in many instances they can be completely cured and thus be restored to a basis of self-supporting and useful members of society; all of which in the long run means a great financial as well as an economic and moral gain for the Commonwealth.

In view of the magnitude of the venereal disease problem this request for $30,000 is a most modest one, but its significance will be great. The establishment of the venereal disease clinics for which it will be largely used forms a vital part of the program instituted by this Department for the control of venereal disease. The success or failure of this program will be largely dependent upon the establishment and efficient operation of these dispensaries. Therefore I have the honor respectfully to request that Your Excellency make this communication the basis of a special message to the Legislature, advocating the appropriation of the sum of $30,000 for the purposes above described."

NEUROLOGISTS AND PSYCHIATRISTS FOR THE MEDICAL DEPARTMENT.

The two following self-explanatory letters are published herewith, since they seem to deserve the widest publicity, and it is desired that they should come to the attention of practitioners not connected with the Boston Society of Neurology and Psychiatry, to which they were originally presented.

War Department, Office of the Surgeon General,
Washington, March 5, 1918.

Dr. C. L. Dana,
National Committee for Mental Hygiene,
50 Union Square, New York City.

Dear Doctor Dana:—

The Surgeon General directs me to write you again concerning neurologists and psychiatrists for the Medical Department. As explained to you previously, the Surgeon General has now great need of men of experience, of maturity and standing for these positions. We have plenty of young men and shall doubtless get more all the time, but we are very deficient in the older group. When you think that surgery is represented in France by such men as Cushing, Brewer, Finney, and Crile, you will readily see that the neurologists who are authorities in their subject are very poorly represented, and if our work is to go on successfully, we must have men of such standing as Ramsey Hunt, Southard, Tilney, Weisenburg, etc. As you doubtless know, troops are moving out very fast, taking our best men with them. We have very few men now to keep up the standing of neurology in the Base Hospitals, and unless something is done, the work we so auspiciously inaugurated will deteriorate very fast.

I have just received a very strong appeal from Salmon in France on this subject. He wants men of position who can be immediately commissioned as majors, or as captains and rapidly advance to majors, as rank is absolutely necessary for proper carrying out of the work.

I am going to ask you to bring this matter to the attention of all the neurologists with whom you are in correspondence. It seems as though where there is more than one medical school in a city, medical schools will have to combine for the purpose of releasing some of the teachers. The situation is very critical and demands immediate action.

Yours very truly,
(Signed) Pearce Bailey,
Lieut.-Colonel, Medical Corps, N. A.

War Department, Office of the Surgeon General,
Washington, March 12, 1918.

Dr. C. L. Dana,
Chairman, Mental Hygiene War Work Committee,
National Committee for Mental Hygiene,
50 Union Square, New York City.

Dear Doctor Dana:—

The Surgeon General directs me to advise you that Colonel Lyster has just returned from the French front with information concerning the creation of a new section of the medical service extremely important, affecting neurologists and psychiatrists. It concerns aviation.

In the first place, aviators require a particularly careful neurological and medical examination before assignment to that special branch of the service, and also during training and afterward, their nervous stability has to be watched carefully. For example, it happens frequently that the first symptoms of an aviator feeling the strain consist in his making bad landings or laying himself open to other accidents. Immediately when this happens it is the Surgeon General's intention to have the aviator carefully examined as to his nervous condition, and the medical officer who examines him will be called upon to make recommendations as to the disposal of the aviator in reference to his findings. The question will come up as to whether he needs rest, transfer, hospital treatment or return.

In addition to all this, an effort is to be made through the joint efforts of the psychiatrists and psychologists to determine beforehand which class of the aerial service the aviator is best fit for. Quite a different personality is required, it seems, for the different classes of the aerial service. For example, fighting men must be young, mentally and physically perfect, daring; scouts, painstaking; night and day bombers, more of the phlegmatic type. It is believed that careful nervous and psychological examinations would contribute greatly to the service in devising tests to determine these types in advance.

The preparation of a commissioned personnel for the above-named purposes is now being undertaken. My personal opinion is that it will require the very highest type of medical officers. The work can be carried out successfully only by men of a combined neurological and psychiatrical training, with long experience and great maturity of judgment. The Division of Neurology and Psychiatry in the Surgeon General's Office turns to you for assistance in recommending names of physicians of this class who will come into the Army for this work.

It will require two general divisions, one to serve with the aviators in France and one a preparatory division to train medical officers in this country for their special duties prior to their departure for France. Dr. Stewart Paton has applied for commission and when commissioned will be assigned to have charge of the first group of medical officers, but he is the only officer at present in mind for this work, and thirty are needed. It is requested that you make these facts known to the alienists, psychiatrists and neurologists of the country.

Very yours truly,
(Signed) Pearce Bailey,
Lieut.-Colonel, Medical Corps, N. A.

CENSORS' EXAMINATION.

The Censors of the Suffolk District Medical Society will meet to examine candidates for admission to The Massachusetts Medical Society, at 8 The Fenway, on Thursday, May 2, 1918, at 4 P.M.

Candidates, who must be residents of the Suffolk District or non-residents of Massachusetts, should make personal application to the Secretary and *present their medical diplomas*, at least one week before the examination.

For further particulars, apply from 2 to 5 P.M. to
Gilbert Smith, *Secretary.*
99 Commonwealth Avenue.

MEMORIAL RESOLUTIONS FOR DR. BLAKE.

The following resolutions were adopted at the meeting of the Obstetrical Society of Boston, March 26, 1918:

JOHN G. BLAKE: IN MEMORIAM.

In the death of Dr. John G. Blake every member of the Obstetrical Society shares with his countless other friends the sense of a very real and personal loss. Although perennially young, he was our Nestor, joining the Society in 1879; he was constant in attendance at our meetings, to which his ripe experience added much of value. An extraordinary knowledge of the properties of drugs, combined with more than his share of medical common sense, made him singularly well equipped for his chosen work, while his personal charm and the happiness that radiated from him helped to make him the ideal family doctor and friend of the old school.

We have lost a very dear associate. May he rest in peace.

Malcolm Storer,
Charles H. Hare.

Correspondence.

BATHING IN RUSSIA.

Roxbury, Mass., March 28, 1918.

Mr. Editor:—

In an article by Dr. T. Leary in the issue of March 28, 1918, an erroneous impression was made, that Russia is the land "of the annual bath."

I was born in Russia and brought up there until I became a youth of twenty—and that is quite a long while ago. Then, as it is more likely now, frequent baths were considered such a necessity that even the poorest peasant had a small log hut specially built and reserved for this purpose.

These bath houses were, of course, quite primitive, but they always had plenty of hot steam and plenty of hot water. To take such a bath in winter time and to get out naked in the yard and roll for a few minutes in the deep snow was a favorite sport enjoyed by many and often partaken of by the writer of this letter.

M. J. Konikow, M.D.

A SCOTTISH HAIR-CAST CASE.

Boston, March 23, 1918.

Mr. Editor:—

The cases brought up by investigators' dragnets, mentioned this week (Boston Medical and Surgical Journal, March 21, 1918, pp. 396, 397) did not include an early case, noted in review in *Archeological Journal*, 1916, lxxii, at p. 402, of *Banff Charters, A. D. 1232-1703, viz.*: Oct. 9, 1232, lands "were granted to Master Neis, the King's physician, by Alexander II;" Neis "is reported to have obtained this reward for the service of cutting a hair-ball from his royal master's heart." While the service seems shadowy, the fee was substantial.

Alfred Ela.

SOCIETY NOTICES.

New England Pediatric Society.—The fifty-third meeting of the New England Pediatric Society will be held at the Boston Medical Library, on Friday, April 12, 1918, at 8.15 p.m.

The following papers will be read:

1. An Unusual Food-borne (Probably Milk) Epidemic of Scarlet Fever.
   Edwin H. Place, M.D., Boston
   H. Linenthal, M.D., Boston
   A. B. Lyon, M.D., Boston
   M. C. Cheney, M.D., Boston.
2. An Analysis of the Wassermann Reactions Done at the Boston Lying-in Hospital for the Years 1916-1917. John B. Swift, M.D., Boston.
3. Auto-serum Treatment of Chorea.
   P. H. Sylvester, M.D., Boston.

Light refreshments will be served after the meeting.

Charles Hunter Dunn, M.D., *President*,
Richard M. Smith, M.D., *Secretary*.

Suffolk District Medical Society.—The annual meeting will be held on Wednesday, April 24, 1918, at the Boston Medical Library, at 8.15 p.m.

Business meeting: Reports of officers and committees, election of officers, incidental business.

The paper of the evening will be by Dr. Eugene Kelley, State Commissioner of Health, on

"The State Venereal Disease Program."

Guests will be welcome at the second part of the meeting, which will begin at about 8.45 p.m.

Gilbert Smith, *Secretary*.

Worcester District Medical Society.—The next regular meeting will be held in G. A. R. Hall, 55 Pearl Street, Worcester, at 4.15 p.m., Wednesday, April 10, 1918.

PAPER.

"Delivery by Caesarean Sections—Based on a Study of Sixty Cases."
by Dr. William H. Rose, Jr., Worcester.

The Censors will meet for examination of candidates for fellowship, Thursday, May 2, 1918, at 4 p.m., in the Reference Department, Worcester Public Library. Candidates should make application to the undersigned a week before that date.

Ernest L. Hunt, *Secretary*.

Massachusetts Anti-Tuberculosis League.—The annual meeting of the Massachusetts Anti-Tuberculosis League will be held in Boston on Thursday, April 11. The transactions of the meeting will be published in a later issue of the Journal.

NOTICE.

The Boston Medical Library is desirous of having a copy of the circular which was sent out to the profession in Boston in 1875 calling for a meeting to consider the formation of a Medical Library. Any one willing to send a copy to the Library, No. 8 The Fenway, will receive the thanks of

Yours very truly,
John W. Farlow, *Librarian*.

RECENT DEATH.

William Jabez Nickerson, M.D., a retired Fellow of The Massachusetts Medical Society, died at his home in New Bedford, March 6, 1918, aged 73 years. He was born in Litchfield, Me., Sept. 12, 1844, and was graduated from the Bowdoin Medical School in 1870. He had practised in Everett and Yarmouth, Mass., in Silver City, New Mexico, and in New Bedford since 1886.